UNIVERSITY OF GHANA

THE EFFECT OF AUDIT COMMITTEE CHARACTERISTICS ON RISK DISCLOSURE: AN ANALYSIS OF LISTED FIRMS IN GHANA

BY

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THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MPhil ACCOUNTING DEGREE

JULY, 2018
DECLARATION

I do hereby declare that this work is the result of my own research and has not been presented by anyone for any academic award in this or any other university. All references used in the work have been fully acknowledged.

I do bear sole responsibility for any shortcomings.

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CERTIFICATION

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DATE

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(SUPERVISOR)

DATE
DEDICATION

I dedicate this thesis to my parents, Mr. Dominic Kofi Ankamah and Mrs. Helena Adwoa Baah for their love, support and prayers for me and their desire to see me climb the educational ladder to the top. Also, the thesis is dedicated to Rev. Dom Gabriel Peh (Order of St. Benedict [OSB]), for his immeasurable contribution towards my education.
ACKNOWLEDGEMENTS

The Psalmist said “Except the Lord build the house, in vain do the builders labour; except the Lord watch over the city, in vain do the watchmen keep vigil. For in vain is you rising up early, and your late to rest”. My utmost gratitude goes to the Almighty God for his gifts of wisdom, knowledge, and understanding that enabled me to conduct this research work. I am most grateful to my supervisors, Dr. Samuel Nana Yaw Simpson and Dr. Joseph Mensah Onumah for their timely intervention, warm supervision, constructive criticisms, and guidance in making this work a success. I am highly indebted to Rev. Fr. Giles Conacher (OSB), Rev. Fr. Ambrose Flavell (OSB), Rev. Fr. Bede Kierney (OSB), Rev. Dom Gabriel Peh (OSB), and the community of Kristo Buase Monastery, Techiman for their prayers, words of encouragement and financial support towards my education. My heartfelt appreciation goes to the Trustees of St. Mary’s Priory Fernham Residual Fund and the family of the late Ms. Eileen Smith for their financial support.

To the best parents I could ever hope for, Mr. Dominic Kofi Ankamah and Mrs. Helena Adwoa Baah, I am highly grateful to you for your financial and moral support towards my education. To my uncles, Mr. Alfred Yaw Kumah and Mr. Paul Kwabena Adinkra, I say may the Almighty God continue to bless you and replenish whatever you have invested in my education especially my postgraduate education.
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ACCA</td>
<td>Association of Chartered Certified Accountants</td>
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<tr>
<td>AICPA</td>
<td>American Institute of Certified Public Accountants</td>
</tr>
<tr>
<td>BRC</td>
<td>Blue Ribbon Committee</td>
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<tr>
<td>ECM</td>
<td>Error Components Model</td>
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<td>FASB</td>
<td>Financial Accounting Standards Board</td>
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<tr>
<td>FE</td>
<td>Fixed Effects</td>
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<tr>
<td>FRC</td>
<td>Financial Reporting Council</td>
</tr>
<tr>
<td>GAAP</td>
<td>Generally Accepted Accounting Principles</td>
</tr>
<tr>
<td>GNAS</td>
<td>Ghana National Accounting Standards</td>
</tr>
<tr>
<td>GSE</td>
<td>Ghana Stock Exchange</td>
</tr>
<tr>
<td>IAS</td>
<td>International Accounting Standards</td>
</tr>
<tr>
<td>IASB</td>
<td>International Accounting Standards Board</td>
</tr>
<tr>
<td>ICAEW</td>
<td>Institute of Chartered Accountants of England and Wales</td>
</tr>
<tr>
<td>IFAC</td>
<td>International Federation of Accountants</td>
</tr>
<tr>
<td>IFRS</td>
<td>International Financial Reporting Standards</td>
</tr>
<tr>
<td>IOD</td>
<td>Institute of Directors in South Africa</td>
</tr>
<tr>
<td>OSB</td>
<td>Order of St. Benedict</td>
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<tr>
<td>RE</td>
<td>Random Effects</td>
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<td>SOX</td>
<td>Sarbanes-Oxley Act</td>
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ABSTRACT

The study examines the effect of audit committee characteristics on risk disclosure in annual reports of listed firms in Ghana for the period 2003 - 2015. Using a sample of 30 listed firms, content analysis technique was employed to compute risk disclosure indexes for quantity and quality of risk disclosure while regression analysis was conducted to examine the effect of audit committee characteristics on risk disclosure. It was found that on average listed firms in Ghana disclosed 29.1% of risk information with the quality of disclosure being 54.0%. With regards to the categories of risk disclosed by listed firms, financial risk was the highly disclosed risk category with operational risk being the least reported risk category. Also, the study revealed that on average nonfinancial firms made more risk disclosures than financial firms. In terms of the quality of risk disclosure, financial firms appeared to disclose high-quality risk information than nonfinancial firms. The results showed a significant positive relationship between quantity of risk disclosure and financial expertise as well as independence of audit committees. On the other hand, size of audit committee and financial expertise of audit committee were found to have a positive and significant relationship with quality of risk disclosure. The study concluded that an audit committee with the relevant characteristics is an effective corporate governance mechanism that can help to protect the interest of shareholders through the effective monitoring of risk disclosure practices of firms. The study contributes to policy by emphasizing that even in the absence of mandatory risk disclosure requirements for firms in Ghana, audit committees with adequate characteristics could help in improving the quantity and quality of risk disclosure by listed firms.
CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Over the last few decades, risk disclosure has gained increasing attention from investors, shareholders, regulatory bodies and researchers (Appuhami & Tashakor, 2017; Deumes, 2008). In its 1987 report of the task force on risk and uncertainties, the American Institute of Certified Public Accountants (AICPA) opined that users of corporate annual reports require more information on the risk and uncertainties that firms encounter. Similarly, the Institute of Chartered Accountants of England and Wales (ICAEW) in its 1999 release entitled “No surprises: The case for better risk reporting”, reiterated the need for directors to identify and report on their companies’ risk profile in annual reports and other available media (ICAEW, 1999).

Moreover, the call for adequate risk disclosures has been heightened in recent times in the wake of corporate scandals involving firms such as Wells Fargo, Pescanova, Toshiba and Tesco (Alzharani & Aljaaidi, 2015; Viljoen, Bruwer & Enslin, 2016). These scandals to a greater extent have reduced the confidence and trust of investors in the objectivity and transparency of annual reports of corporate firms. The growing lack of confidence in the financial reports of firms has heightened the demand for greater risk disclosure to avoid the reoccurrence of events leading to some of these past corporate scandals (Alzharani & Aljaaidi, 2015).

The importance of adequate risk disclosures by firms cannot be overemphasized. Scott (2003) asserts that ordinarily, a risk-averse investor in making his/her investment decisions will take into consideration the risk profile of the firm. Since investors do not have insider information on
the potential risks of the firm, they tend to rely on risk disclosures to evaluate the firm’s risk profile in order to ascertain its true value when making their economic buy or sell decisions (Abraham & Cox 2007; Boesso & Kumar, 2007). By disclosing more risk information in annual reports and other available media, firms seek to reduce information asymmetry as well as the agency cost associated with it (Khlifi & Bouri, 2010). This helps in improving transparency and enhance the trust and confidence of stakeholders in the financial reports of firms. Also, it is believed that enhanced risk reporting decreases a firm’s perceived risk thereby reducing its cost of borrowing in the capital market (Linsley & Shrives, 2006; Abraham & Cox, 2007).

Despite the importance of risk disclosure, adequate risk disclosure comes with additional cost and may sometimes lead to disclosure overload. However, the incentives for disclosing more risk information appear to outweigh its associated cost. Hence, the International Accounting Standards Board (IASB, 2010) indicates that firms should endeavour to disclose the major risks that they are exposed to as well as the strategies they have adopted to mitigate such risks. Also, the International Financial Reporting Standards (IFRS) requires that firms report on how they manage their financial instruments especially issues pertaining to financial risk as required by IFRS 7.

It must be emphasized that firms are exposed to various kinds of risk other than financial risk (Dobler, 2008) though IFRS 7 tends to focus on the disclosure of risk associated with financial instruments. It must be emphasized that, apart from financial risk, firms are exposed to nonfinancial risks such as operational risk, environmental risk, strategic risk, integrity risk, information processing and technology risk, compliance risk, etc. With the increasing regulatory demands and mounting pressures from investors and other stakeholders in the capital market for
additional risk disclosures other than financial risks, it has become necessary for nonfinancial risk disclosures beyond what is mandatorily required. However, Kirkpatrick (2009) argues that the practice where the disclosure of nonfinancial risk has become voluntary has somewhat contributed to the inadequate disclosure of such risks by firms.

To enhance risk disclosure, stakeholders rely on corporate governance mechanism such as the board of directors to ensure that information asymmetry between management and shareholders is reduced (Viljoen et al., 2016). The board of directors of a firm is entrusted with the oversight responsibility of monitoring the financial reporting, risk disclosure practices, and internal control system of the firm (Kirkpatrick, 2009). In performing their oversight role of monitoring risk management and disclosure practices by management, the board of directors of a firm tends to delegate this function to its audit committee which is deemed to have the competence in dealing with financial reporting and risk disclosure issues (Karamanou & Vafeas 2005; Viljoen et al., 2016).

The significant role of an audit committee in terms of enhancing the quality of financial reporting, overseeing the firm’s internal control system and work of external auditors, and monitoring and evaluating risk management and disclosure practices of the firm cannot be overemphasized. For instance, the Blue Ribbon Committee (BRC) describes the oversight role of audit committees as “ensuring that quality accounting policies, internal controls, and independent and objective external auditors are in place to deter fraud, anticipate financial risks, and promote accurate, high quality and timely disclosure of financial and other material information to the board, the public markets, and shareholders” (BRC, 1999, p. 20).
Moreover, Akhtaruddin and Haron (2010) opine that quality and transparent voluntary disclosures largely depend on a well-functioning audit committee. In this light, over time, the big four accounting firms (PricewaterhouseCoopers, KPMG, Ernst & Young, and Deloitte and Touche) and major international professional accounting associations such as the Association of Chartered Certified Accountants (ACCA) and the American Institute of Certified Public Accountants (AICPA) have issued guidelines aimed at enhancing the effectiveness of audit committees in enhancing financial reporting quality. Also, the Securities and Exchange Commission (SEC) of the US and the Financial Reporting Council (FRC) of the UK continue to issue guidelines and recommendations that seek to enhance the role of audit committees as an effective corporate governance mechanism.

1.2 Statement of the Problem

Generally, disclosure of risk information other than financial risk (as required by IFRS 7) is voluntary and therefore in practice the content and volume of risk disclosure is mostly based on the discretion of management with the approval of the board of directors (Akhtaruddin & Haron, 2010; Ali & Taylor, 2014; Boesso & Kumar, 2007; Damak-Ayadi & Klibi, 2015). Since disclosure of nonfinancial risk information is voluntary and with no clearly defined requirements with regards to the volume or content of risk information to be disclosed, firms tend to disclose more positive and forward-looking information and report less negative risk information to avoid the consequences associated with disclosing more negative risk information (Appuhami & Tashakor, 2017; Ghazali, 2007; Linsley & Shrives, 2006). However, it is worthy to note that inadequate risk disclosure denies investors the opportunity to critically analyze a firm’s risk profile in terms of making their investment decisions.
To avoid the possibility of information asymmetry occasioned by low-risk reporting, the board of directors of a firm is required to perform an oversight responsibility of monitoring the financial reporting, risk management and disclosure practices of the firm. In practice, this oversight responsibility of the board is mostly entrusted to its audit committee who exercises this role on behalf of the board (Karamanou & Vafeas 2005; Viljoen et al., 2016). However, in recent times, audit committees have come under increased public scrutiny and their effectiveness being called to question due to the increasing global corporate scandals resulting from poor monitoring of financial reporting processes of firms (Appuhami & Tashakor, 2017; Ittner & Keusch, 2015).

This development has led to increased financial reporting regulations, and more extensive disclosure and listing requirements in the US, UK, Australia and other jurisdictions (Ittner & Keusch, 2015). Moreover, Madi, Ishak, and Manaf (2014) argue that the effectiveness of an audit committee in improving the quality of financial reporting and risk disclosures of a firm is contingent on its characteristics. Thus, since the audit committee is an essential corporate governance mechanism charged with the responsibility of monitoring both financial and non-financial disclosures, its characteristics are likely to influence the extent of risk disclosure by firms (Appuhami & Tashakor, 2017).

Despite the increasing attention from stakeholders on the need to strengthen role of audit committees’ towards improving risk disclosures, less attention has been drawn to the relationship between audit committee characteristics and risk disclosure. In examining the determinants of risk disclosure, studies drawing on corporate governance variables including audit committee characteristics (see Khiari & Karaa, 2013; Mangena & Pike, 2005; Oliveira, Rodrigues & Craig, 2011) have not taken into consideration the effect of individual audit committee characteristics
on risk disclosure. Also, notwithstanding the increasing attention on the role of audit committees in improving the level and quality of both financial and non-financial disclosures as asserted by Bedard, Coulombe and Courteau (2008), not many studies have empirically examined the effect of audit committee characteristics on risk disclosure. At best, the available limited empirical studies in this area tend to focus on the impact of audit committee characteristics on corporate disclosures in general and not risk disclosure in specificity.

In addition, in terms of methodology the available studies related to the topic (see Akhtaruddin & Haron, 2010; Allegrini & Greco, 2011; Chapple, Jubb, & Lee, 2012; Madi et al., 2014; Mangena & Pike, 2005) relied on data for a single year to examine the effect of audit committee characteristics on corporate disclosure. However, the researcher believes that to be able to examine whether indeed audit committee characteristics have a strong influence on risk disclosure, the study should adopt a panel regression technique which has the capacity of assessing the effect over a long period.

Moreover, in the Ghanaian context, there appear to be no studies on audit committee characteristics and risk disclosures. The available literature only shows studies on the effect of corporate governance variables such as board characteristics on risk disclosure. However, considering the contextual differences with regards to the regulatory environment of Ghana compared to developed countries such as the US, UK, and Australia where the available limited studies were conducted on the topic, it is safe to say that the findings of such studies (see Allegrini & Greco, 2011; Appuhami & Tashakor, 2017; Chapple, Jubb & Lee, 2012) cannot be appropriately applied to the Ghanaian context. This is because, while the US has the SEC, Sarbanes-Oxley Act (SOX) and the UK has the FRC all of which issue guidelines and corporate
disclosure requirements from time to time to enhance the risk disclosure practices of their firms, Ghana has no benefit of such guidelines and disclosure requirements for risk disclosure. Therefore, the flexibility of the regulatory framework for risk disclosure in Ghana provides a unique setting in which to examine the effect of audit committee characteristics on risk disclosure.

Based on the aforementioned limitations of prior related studies and the contextual differences in the regulatory environment of Ghana and other developed countries as outlined, the study seeks to examine the effect of audit committee characteristics on risk disclosure of listed firms in Ghana using a panel data spanning the period 2003 - 2015.

1.3 Objectives of the Study

The purpose of the study was to examine the effect of audit committee characteristics on risk disclosure by listed firms in Ghana for the period 2003 - 2015. The following specific objectives were set out to be achieved:

i. To assess the quantity of risk disclosure by listed firms in Ghana for the period 2003 - 2015

ii. To assess the quality of risk disclosure by listed firms in Ghana for the period 2003 - 2015

iii. To examine the effect of audit committee characteristics (size, gender, independence, financial expertise, frequency of meetings) on quantity of risk disclosure for the period 2003 - 2015
iv. To examine the effect of audit committee characteristics (size, gender, independence, financial expertise, frequency of meetings) on quality of risk disclosure for the period 2003 - 2015

1.4 Significance of the Study

The study contributes to research, practice, and policy in the area of risk reporting. Firstly, by examining the extent to which audit committee characteristics influence risk disclosure, the study contributes to the debate on the effectiveness of audit committee as a corporate governance mechanism that enhances risk disclosure. Secondly, although risk disclosure has received considerable attention in the accounting literature, studies on quality of risk disclosure remain very limited. Empirical studies on risk disclosure have focused more on quantity of risk disclosure with less emphasis on quality. Therefore, the current study will contribute to filling the gap by assessing both quantity and quality of risk information disclosed in annual reports of firms.

In terms of contribution to practice, the study will provide an insight to the board of directors of firms on the need to strengthen audit committees to ensure the effective performance of their monitoring role of enhancing risk disclosures. In addition, the study contributes to policy by emphasizing the role of audit committees as a corporate governance mechanism that enhances risk disclosure. Detailed explanation on the implications of the study to research, practice, and policy are presented in Chapter Five under the heading “implications of the study” with appropriate subheadings as implications for research, implications for practice, and implications for policy.
1.5 Scope of the Study

The scope of the study was limited to an assessment of the quantity and quality of risk disclosure by 30 listed firms on the GSE for the period 2003 - 2015. In analyzing the quantity of risk disclosure, the study focused on four major risk categories - financial risk, strategic risk, operational risk, and compliance and integrity risk. In analyzing the quality of risk disclosure, the study employed a risk reporting framework comprising four quality parameters - relevance, understandability, comparability, and verifiability.

1.6 Organization of the Study

The study was organized into five chapters. Chapter One involves the introduction of the study and presents the background of the study, the statement of the problem and the research objectives. Other sections of the chapter include significance of the study, scope of the study, and organization of the study. Chapter Two involves a review of theoretical and empirical literature on risk disclosure and audit committee characteristics. It presents the theoretical framework and conceptual framework underpinning the study as well as the hypotheses. Chapter Three presents the methodology adopted for the study. It outlines the research paradigm and research approach employed for the study, the sample and sampling procedures used as well as the sources of data. Also, the chapter involves a description of the methods for data analysis. Chapter Four presents an analysis of results of the study as well as the discussion of findings in relation to prior literature. Chapter Five ends the study by presenting a summary of the key findings and the conclusions drawn from the findings. In addition, the chapter presents that the implications of the study, limitations of the study and suggestions for further research.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

The chapter presents a theoretical and empirical review of relevant literature on risk disclosure and audit committee characteristics. It discusses the concepts of risk and risk disclosure, categories of risk, determinants of risk disclosure, motivations for risk disclosure, disincentives of risk disclosure, and theories underpinning risk disclosure. In addition, the chapter presents an empirical review of the influence of audit committee characteristic on risk disclosure. The hypotheses of the study and the conceptual framework are also presented in this chapter. The chapter ends with a summary of the key issues discussed in the review.

2.2 Theoretical Framework

Over time, researchers have drawn on two broad schools of thought - the economic theory perspective, and socio-political theory perspective, to explain the motivation for risk disclosure by firms (Linsley & Shrives, 2000; Rajab & Schachler, 2009). The economic theory perspective is premised on the assumption of self-interest and profit maximization objective of the firm. The major theories associated with the economic theory perspective are agency theory, signalling theory, capital need theory, political cost theory and proprietary cost theory. On the other hand, the socio-political theory perspective is based on the assumption that the actions of a firm are motivated by interactions between the firm and the environment it finds itself. Thus, risk disclosure is motivated by the social and political interactions between the firm and its immediate environment. Theories that are grounded in the socio-political perspective include the stakeholder theory and legitimacy theory.
In choosing among the various theories under the two major schools of thought to support hypotheses on the effect of corporate governance variables on voluntary disclosures, Cormier Magnan and Van Velthoven (2005) argue that risk disclosure is a complex phenomenon that cannot be explained by a single theory. However, by far the agency theory has been widely employed by several risk disclosure studies (see Barako et al., 2006; Chapple et al., 2012; Haat et al., 2008; Ho & Wong, 2001; Taylor, 2011) to explain the motivations of firms towards risk disclosure.

Therefore, agency theory was employed as the theoretical framework for the study because of its consistency in explaining the role of audit committees in safeguarding the interest of shareholders and other stakeholders of the firm, as asserted by Barako et al. (2006); Haat et al. (2008); Taylor (2011). The agency theory evolved from the agency relationship phenomenon propounded by Jensen and Meckling (1976). They define the agency relationship as “a contract under which one or more persons (the principals) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent” (p. 308). In other words, an agency relationship is said to exist when a principal (shareholders) engages an agent (management) to act on the former’s behalf with aim of promoting the former’s interest.

It must be indicated that in a principal-agent relationship, the agency theory assumes a conflicting interest between the two parties in that they tend to seek their individual selfish interests in the course of organizing their activities to achieving the main objective of the organization (Lacoste, Lavigne & Rigamonti, 2010). Hence, the relationship between the principal (shareholders) and agent (management) is streamlined through the monitoring role of
the board of directors to ensure that the conflicting interests of the two parties are achieved fairly to the satisfaction of both parties.

In terms of the monitoring role of audit committee on risk disclosure by firms, it is believed that as a corporate governance mechanism the audit committee is guided by the agency theory in ensuring that the interest of shareholders is protected. This is achieved by monitoring the financial reporting and risk disclosure practices of firms and raising the necessary issues of concern so that management will be somewhat compelled to act appropriately in the interest of shareholders. While shareholders may not be involved in the day-to-day running of the firm, it is only appropriate that there is a mechanism put in place to ensure that their interest is served and that they are not shortchanged by management. In this regard, the agency theory proposes an effective oversight responsibility over the activities of management through a corporate governance mechanism such as the board of directors and for that matter the audit committee. The audit committee acting on behalf of the shareholders is required to monitor and streamline the risk disclosure practices of firms as exercised by management. Therefore, the agency theory is deemed to be very relevant to this study because it underscores the importance of an audit committee as a corporate governance mechanism that seeks to protect the interest of shareholders.

In explaining the effect of audit committee characteristics on voluntary disclosures, Chapple et al. (2012); Haat, et al., 2008; Madi et al. (2014) employed the agency theory to underpin their studies. Ho and Wong (2001) posit that an audit committee that is composed mainly of independent non-executive directors helps to improve the quality of financial reporting and reduces information asymmetry. In this direction, Taylor (2011) argues that the agency theory
supports the idea that audit committees should be composed mainly of non-executive directors who will seek the interest of shareholders who appointed them and thereby reduce information asymmetry. Concurring with the assertions of Haat et al. (2008), Ho and Wong (2001); Taylor (2011), the study draws on agency theory to explain the relationship between audit committee characteristics and risk disclosure practices of listed firms.

2.3 Corporate Disclosures

In recent times, investors are demanding for more financial and non-financial disclosures from firms to enable them properly assess the risk profiles of firms to guide them in making their investment decisions. Hence, directors have come under much pressure to satisfy the information needs of stakeholders through adequate corporate disclosures. Corporate disclosure may be defined as “the reporting of economic information, whether financial or non-financial, quantitative or qualitative concerning a firm’s financial position and performance” (Owusu-Ansah, 1998, p.608). The objective of corporate disclosures is to provide relevant and reliable information on the financial and non-financial activities and performance of firms to permit informed decisions by investors and other relevant stakeholders. Thus, corporate disclosure is a means of communicating a firm’s financial and non-financial related issues that have the potential of affecting the financial position or performance of the firm, to its relevant stakeholders (Hassan et al., 2009; Healy & Palepu, 2001).

Corporate disclosures can be categorized as either mandatory or voluntary depending on the regulatory regime a firm finds itself. While mandatory disclosures focus on the disclosure of financial information in compliance with IFRS and other financial reporting regulations, the focus of voluntary disclosures is on nonfinancial information which is generally narrative in
nature and whose disclosure largely depends on the discretion of management with the approval of the board of directors of the firm. The two major categories of corporate disclosures – mandatory disclosures and voluntary disclosures are discussed as follows:

2.3.1 Mandatory Disclosures

As required by IFRS, GAAP and some country-specific corporate reporting regulations, firms are mandated to provide financial statements and relevant notes of accounting policies to their stakeholders through annual reports or other available media. In complying with the statutory and regulatory financial reporting requirements, firms make disclosures pertaining to their financial performance by issuing financial statements and notes to such statements at regular intervals or in most cases yearly to their stakeholders. This practice of fulfilling the statutory and regulatory requirements relating to corporate reporting is referred to as mandatory disclosure. Thus, mandatory disclosures comprise the presentation of financial statements and complementary notes as required by IFRS and other statutory regulations and reporting frameworks (Uyar & Kiliç, 2012).

Apart from the requirements of IFRS, GAAP, and SEC on the nature of the information that firms are mandatorily required to disclose, the scope of mandatory disclosures may depend on country-specific financial reporting regulations and industry-specific disclosure requirements. For instance, before Ghana adopted IFRS in 2007, financial reporting and for that matter, mandatory disclosures were regulated by the Ghana National Accounting Standards (GNAS) and the Companies Code, 1963 (Act 179). The Companies Code prescribed the minimum content of information to be provided as financial reports of firms, while the framework for preparing and presenting such information was provided by the GNAS. Also, firms in the financial sector in
addition to the requirement of the Companies Code are guided by special regulations by the Bank of Ghana. In addition, listed firms in Ghana are required to adhere to listing rules set out by the Ghana Stock Exchange (GSE). However, since Ghana’s adoption of IFRS, all firms whether listed or non-listed present their financial statements based on the reporting framework of IFRS. Therefore, from 2007 onwards mandatory disclosures by firms in Ghana are guided by IFRS.

2.3.2 Voluntary Disclosures

The incessant demand for more information by stakeholders means that mandatory disclosures alone can no longer satisfy the information needs of stakeholders. As a result, firms provide additional nonfinancial information to complement their financial statements with the aim of satisfying the information needs of stakeholders and enhancing investor confidence in annual reports of firms. However, it must be emphasized that nonfinancial disclosures are voluntary and not explicitly required by any specific provision of IFRS unlike financial disclosures.

From the foregoing, voluntary disclosure may be defined as “the disclosure in excess of requirements, representing free choices on the part of management to provide accounting and other information deemed relevant to the decision needs of users of annual reports” (Meek, Roberts & Gray, 1995, p. 8). Thus, voluntary disclosures are narrative in nature and contain nonfinancial information on business operations, opportunities and threats, internal controls, corporate social responsibility reports, information on shareholders, environmental related issues, human resource challenges, legal and regularities issues associated with the firm’s operations among others as may be deemed necessary by directors of a firm.

In the voluntary disclosure regime, the amount of information disclosed by firms varies by country, industry, and in some cases firm size. In addition, the volume of voluntary disclosures
largely depends on the corporate governance framework of a firm as well as the firm’s own characteristics. Moreover, studies have shown that voluntary disclosures may be influenced by the unique disclosure styles of top management and directors of a firm (Bamber et al., 2010). Apart from these factors, Healy and Palepu (2001) contend that the incentives for voluntary disclosures may include a reduction in borrowing cost, elimination of agency costs, minimization of perceived risk of a firm, reduction in information asymmetry among other factors.

It must be emphasized that the mere disclosure of nonfinancial information does not necessarily make such disclosures voluntary. The disclosure of a particular information is said to be voluntary if it is not strictly required by any statutory or regulatory framework but based solely on management and board discretion. This implies that the financial or nonfinancial nature of an information disclosed does not necessarily determine whether such disclosure is mandatory or voluntary. Moreover, in situations where there is a statutory requirement to disclose certain information such as environmental disclosures, but the content of the information to be disclosed is not explicitly outlined, the use of management or directors’ discretion to determine the extent of such disclosure does not make it voluntary disclosure so far as it is required by law.

2.4 Concept of Risk

In conducting a risk disclosure study, the key element that takes centre-stage and must be clearly defined is the concept of risk. Though the term risk has received considerable attention in accounting, finance and economics literature, there is no universally accepted definition of risk. The concept of risk can be said to be influenced by time, where risk has been defined by pre-modern era studies as the occurrence of something bad while the modernist perspective of risk is that of either negative or positive result of an event (Linsley & Shrives, 2006). In addition, since
the industrial revolution, the definition of risk has been shaped by developments in the insurance industry where risk has become susceptible to the calculation of probabilities of occurrence of negative events which require the payment of compensations (Ewald, 1991).

Over time, risk has been conceptualized from two major perspectives - the business point of view and the economic point of view which are based on whether risk is considered synonymous with uncertainty or the two terms are mutually exclusive. From the business perspective, the International Federation of Accountants (IFAC, 1999) conceptualizes risk as a tentative future event, which could affect the achievement of an organization’s core objectives. The definition of risk from this perspective does not distinguish between risk and uncertainty but conceptualizes risk as any uncertainty related to a potential gain or loss (ICAEW, 1999).

From the economic perspective, it has been argued that risk and uncertainty are not synonymous. In an attempt to distinguish between risk and uncertainty, Miller (1992) postulates that uncertainty reduces the probability of an event and thereby increases the likelihood of the occurrence of risk. On the other hand, Watson and Head (1998) contend that whereas risk is the result of a past action whose effect can be estimated with greater precision, uncertainty of an event or action is when the potential effect of such action cannot be estimated with precision. Hamberg (2000) distinguishes between risk and uncertainty by defining the two terms as follows: risk is an event whose probability of occurrence can be estimated with some degree of certainty while uncertainty has to do with a situation where the occurrence of an event cannot be predicted with some level of precision. Hamberg goes further to conceptualize risk as a mathematical calculation of the expected outcomes and makes a proposition to the effect that risk
and expected returns are positively related in real economic risk situations. Thus, the economic perspective of risk clearly separates the term from uncertainty.

In a broader sense, Linsley and Shrives (2006, p. 389) define risk as “any opportunity, prospect, hazard, harm, threat or exposure that have already impacted or may have an impact on a firm or its management in the near future”. Thus, risk refers to uncertain present or future events that may have a positive or adverse effect on an entity. The definition of risk by Linsley and Shrives does not explicitly distinguish between risk and uncertainty but sought to describe risk as either a threat, uncertainty, or an opportunity that arises from the events of an organization which may have a present or future positive or negative effect on the organization. However, in this study, risk is conceptualized as a potential positive or negative outcome relating to a past, present, or future event or action whose occurrence can be forecasted to some extent or whose value can be measured with greater precision. This broad definition of risk is adopted for the study because it incorporates uncertainties as part of risk which makes the definition very comprehensive.

2.5 Classification of Risk

As part of business activities, firms are exposed to various kinds of risk from both internal and external factors (Dobler, 2008) and how firms prioritize these risks is prerequisite for the effectiveness of their risk management strategies (ICAEW, 1998). There has not been a widely accepted classification of risks associated with activities of the firms other than the broad classification based on financial and nonfinancial nature of risk (Ali & Taylor, 2014). However, Crouhy, Galai and Mark (2006, p. 14) contend that “categorization of risk is important so that ill-defined risk can be measurable, manageable, and transferable”. Moreover, Cabedo and Tirado (2004) argue that firms should know beforehand the kind of risks they are exposed to in order to
provide adequate risk information on such risks to help provide insight to investors on the firm’s risk profile.

Concerning the classification of risk encountered by firms, Jorion (1997) posits that firms are generally exposed to three categories of risk relating business, strategic and financial aspect of their operations. The Turnbull Report (1999) classifies risk faced by firms into four main categories - business risk, operational risk, financial risk, compliance and other risks. Helliar et al. (2001) classify risks into four major categories – financial risk, strategic risk, employee-related risks, and miscellaneous risks. Helliar et al. went further to describe financial risks as comprising of unacceptable rates of return and trade credit risk; strategic risks comprising a fall in market share, unfavourable competition from well-established and strong competitors; employee-related risks comprising of employee fraud, strikes, and labour unrests; and miscellaneous risks comprising all other kinds of risks other than the aforementioned.

By expanding the risk net, the ICAEW (2002) grouped the risks associated with the activities of firms into seven major types - financial risk, strategic risk, operational risk, environmental risk, empowerment risk, information and technology risk, and reputation and integrity risk. In a broader sense, Beretta and Bozzolan (2004) opine that risk factors of a firm may come from three major sources: the firm’s strategy, firm’s characteristics, and the environment in which the firm operates. Based on the categorization framework of ICAEW, Linsley and Shrives (2006) regrouped the various kinds of risk into six risk categories - financial risk, operational risk, empowerment risk, information processing and technology risk, integrity risk and strategic risk.

A careful review of the risk categories presented by various researchers shows that though there is no universally accepted classification of the risks encountered by firms, risks faced by firms
are of either financial nature or nonfinancial nature as postulated by Cabedo and Tirado (2004). Thus, primarily corporate risks can be classified into two major types - financial risk and nonfinancial risk. Apart from this two major classifications, it can be deduced that at best the types of risk encountered by firms can be defined based on the industry they belong to, management structure and style of the firm, the political regime in which the firm operates among other factors. Moreover, it was revealed that though prior studies have classified risks into various categories, the widely adopted risk categorization were financial risk, strategic risk, compliance and integrity risk, and operational risk.

Taking into consideration the categories of risk presented by various researchers as revealed in the literature, the study builds on the risk categorization frameworks of ICAEW (2002); Linsley and Shrives (2006); Greco (2012) and regroups the various risks into four major categories to reflect the nature of risk items disclosed by firms in Ghana. Therefore, the four categories of risk that the study intends to rely on for the purpose of analysis are financial risk, operational risk, strategic risk, and compliance and integrity risk.

The information in Table 2.1 involves a summary of the classification of risks by various researchers as found in the literature on corporate risk. The information is presented to give a simple but comprehensive list of risk categorizations from the perspective of other researchers. Therefore, the various categories of risks proposed by prior studies have been presented in Table 2.1 with brief definition and examples of the risk items they entail.
<table>
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<th>Risk Category</th>
<th>Prior Studies</th>
<th>Definition</th>
<th>Sub-categories (Risk Items)</th>
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<tr>
<td>Financial risk</td>
<td>ICAEW (2002); Greco (2012); Linsley &amp; Shrives (2006); Crouhy et al. (2006); Aureli, &amp; Salvatori (2012)</td>
<td>Risks related to the difficulty of clients meeting their payment obligations; adverse changes in interest rates and foreign exchange rates, as well as liquidity.</td>
<td>Interest rate risk, foreign exchange risk, commodity price risk, credit risk, liquidity risk</td>
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<tr>
<td>Credit risk</td>
<td>Giesecke (2004); Wong (2012); Cabedo &amp; Tirado (2004)</td>
<td>The risk that borrowers or parties to a financial instrument will default in payment. Credit risk arises from lending, trading, and securities servicing activities</td>
<td>Downgrading by a rating agency collateral information about credit quality of financial assets</td>
</tr>
<tr>
<td>Market risk</td>
<td>Servaes &amp; Tufano (2006); Wong (2012)</td>
<td>Risk related to loss due to adverse changes in the financial markets.</td>
<td>Interest rate risk, Foreign exchange risk, Commodity price risk</td>
</tr>
<tr>
<td>Liquidity risk</td>
<td>Cabedo &amp; Tirado (2004); Wong (2012)</td>
<td>The risk that a company may not have sufficient funds to meet its present payment obligations as they fall due.</td>
<td>Analysis of financial liabilities Failure to meet debt obligations</td>
</tr>
<tr>
<td>Environmental risk</td>
<td>ICAEW (2002); Aureli &amp; Salvatori (2012).</td>
<td>Risks related to threat to living organisms and environment arising out of the firm’s activities.</td>
<td>Environmental pollution Non-compliance with environmental regulations</td>
</tr>
<tr>
<td>Risk Type</td>
<td>Sources</td>
<td>Description</td>
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<tr>
<td>------------------------</td>
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<tr>
<td>Operational risk</td>
<td>ICAEW (2002); Greco (2012); Linsley &amp; Shrives (2006); Crouhy et al. (2006); Helliar et al. (2001); Wong (2012); Aureli &amp; Salvatori (2012)</td>
<td>The risk of direct and indirect loss resulting from inadequate or failed internal processes, people, and systems or from external events</td>
<td>Decline in the customer base Customer satisfaction Stock obsolescence Product and service failure Product development Reduction in production capacity Brand name erosion Weak internal controls Employee turnover</td>
</tr>
<tr>
<td>Strategic risk</td>
<td>ICAEW (2002); Greco (2012), Linsley &amp; Shrives (2006); Crouhy et al. (2006); Aureli &amp; Salvatori (2012); Ali &amp; Taylor (2014)</td>
<td>Risks related to events that are external to the company, but have a significant impact on its strategic decisions or activities</td>
<td>Business portfolio Product lifecycle Competitors Performance measurement Product pricing Business valuation</td>
</tr>
<tr>
<td>Empowerment risk</td>
<td>ICAEW (2002); Linsley &amp; Shrives (2006)</td>
<td>The risk that management or employees are not well inspired to perform their duties as expected or exceed their authority</td>
<td>Leadership and management Outsourcing Performance incentives Change readiness Communications</td>
</tr>
<tr>
<td>Information technology risk</td>
<td>ICAEW (2002); Linsley &amp; Shrives (2006)</td>
<td>The risk that the information technologies of the firm are not operating as intended, their</td>
<td>Information infrastructure and processing risk</td>
</tr>
<tr>
<td>Risk Category</td>
<td>Sources</td>
<td>Description</td>
<td>Sub-Risk Category</td>
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<tr>
<td>Integrity and Reputation risk</td>
<td>ICAEW (2002); Greco (2012); Linsley &amp; Shrives (2006); Aureli &amp; Salvatori (2012)</td>
<td>The risk that a good reputation, which can lead to value creation, turns to a bad reputation and, as a result, the firm loses its integrity, company value being destroyed.</td>
<td>Management fraud, Employee fraud, Loss of reputation, Negative publicity</td>
</tr>
<tr>
<td>Legal and Compliance risk</td>
<td>Greco (2012); Aureli &amp; Salvatori (2012)</td>
<td>Risk is exposure to legal penalties, financial forfeiture and material loss an organization faces when it fails to act in accordance with industry laws and regulations</td>
<td>Health and safety risk, Industry regulation (i.e. antitrust, fair competition), Litigations, Fines and penalties</td>
</tr>
</tbody>
</table>

**Source:** Researcher’s Own Construct from Literature Review
2.6 Risk Disclosure

Since the mid-1990s, corporate disclosures have shifted from the usual disclosure of financial statements and other financial related information towards a broader scope of providing additional nonfinancial disclosures on issues such as risks and uncertainties, environmental reporting, corporate social responsibility, sustainability reporting among others. Campbell and Stack (2008) assert that not until the mid-1990s, disclosure of risk and risk management strategies by firms in a dedicated section in their annual reports was lacking. Despite the importance of risk reporting, Campbell and Stack revealed that not until recently, firms provided only scanty risk-related information in an unsystematic manner in their annual reports.

Risk disclosure may be defined as “the reporting of information concerning firms’ strategies, characteristics, operations, and other external factors that have the potential of affecting expected results” (Beretta & Bozzolan, 2004, p. 269). It refers to “any information disclosed to readers on any opportunity, prospect, hazard, harm, threat or exposure that has already impacted or may have an impact on the firm or its management in the near future” (Linsley & Shrives, 2006, p.389). Similarly, Hassan (2009, p. 669) defines risk disclosure as “the financial statements inclusion of information about managers’ estimates; judgments; market-based accounting policies such as impairment, derivative hedging, financial instruments, and fair value as well as the disclosure of concentrated operations; nonfinancial information about a firm’s plans, recruiting strategy, and other operational, economic, political and financial risks”.

From the definitions of risk disclosure by Beretta and Bozzolan (2004); Hassan (2009); Linsley and Shrives (2006), it appears that the researchers intended to expand the scope of risk disclosure to incorporate not only issues pertaining to financial risk but nonfinancial risk as well. However,
they failed to indicate the fact that risk disclosure should include information on the specific risk management strategies of firms. The inclusion of risk management strategies in risk reporting is important in that it gives readers a fair idea of how a firm manages its risks thereby enhancing stakeholder confidence in the firm’s efforts towards mitigating the risks it encounters (Linsley & Shrives, 2000). In this regard, Aureli and Salvatori (2012) indicate that risk disclosure should not be confined to only the disclosure of specific risks but should include the strategies employed in monitoring and managing such risks. Therefore, in this study, risk disclosure is conceptualized as the act of reporting to stakeholders of a firm, the various risks it is exposed to, the effects of such risks on current and future operations of the firm and the measures adopted to mitigate or manage the risks.

The importance of risk disclosure cannot be overemphasized. Prior studies have shown that risk disclosure is part of an organizational strategy to manage investors and other stakeholders’ expectations and to justify corporate risk management (Madrigal, Guzman & Guzman, 2015). It provides users of annual reports a fair idea of how various risks are identified and analyzed, evaluated and managed (Collier, 2009; Khaledi, 2014). This is very important because the problem of information asymmetry may arise when firms withhold vital information on the risk they face from stakeholders. For instance, it has been argued that the absence of adequate risk disclosure affects the effective operation of capital markets and in some cases may bring the operation of capital markets to a halt (Rajab & Handley-Schachler, 2009).

### 2.7 Motivations for Risk Disclosure

The consequence of not making adequate risk disclosures may be more severe now than before considering the dynamic nature of the corporate environment and the increasing demand from
stakeholders for greater risk disclosures by firms (Linsley & Shrives, 2005). In this regard, the extensive narrative reporting relating to a firm’s risk profile has been lauded as a practice that ensures investor confidence and better accountability of firms to their stakeholders (Ali & Taylor, 2014). Hence, Ali and Taylor contend that the increasing awareness of the importance of risk reporting calls for firms to conduct business in a more publicly responsible manner.

Risk disclosure may be associated with a multitude of benefits. Studies have shown that risk disclosure reduces the cost of borrowing in the capital market, enhances sound portfolio management decisions, aids effective risk assessment, enhance corporate governance system, reduces information asymmetry, facilitates financial markets’ efficiency, enhances firm’s reputation and image in the market, and improves stock prices of firms (Solomon, et al., 2000). Some of the major incentives for risk disclosure have been discussed as follows:

2.7.1 Reduce Cost of Capital

Based on the assumption of the resource-dependence theory, adequate risk disclosures can be said to be an incentive for the firm in terms of raising capital at a reduced cost from the market since greater risk disclosure enhances a firm’s reputation and improves its public image. It is believed that if the portion of the cost of capital associated with perceived risk of a firm is reduced due to adequate risk disclosure, it translates into a reduction in borrowing cost in the capital market (Linsley & Shrives, 2006). This is because according to Hassan (2014), capital cost is associated with the perceived risk and that the uncertainty of investors about the riskiness of a firm is reduced through adequate risk disclosures. Therefore, risk disclosure reduces the borrowing cost of firms due to a reduction in the inherent cost associated with investors’ perceived risk of the firm.
2.7.2 Enhance better Portfolio Management

Prior studies (see Beattie & Pratt, 2002; Schrand & Elliott, 1998; Solomon et al., 2000) have revealed that investors continue to demand more risk disclosures so that they can evaluate the risk profile of firms before making their investment decisions. For instance, Schrand and Elliott (1998) investigated risk disclosure by US firms and found that firms were not providing sufficient information on the various risks they encounter. This is against the backdrop that investors need risk information of firms to determine their risk profile, the accurateness of stock prices, and estimates of the market value of the firm (Beretta & Bozzolan, 2004).

2.7.3 Reduce Information Asymmetry

In an agency relationship such as that of shareholders and management of firms, the likelihood of an agency problem occurring due to the conflicting interest of shareholders and management cannot be overlooked. The agency problem is usually fueled by information asymmetry where management fails to make full disclosure of information concerning all the activities of the firm to shareholders. By the virtue of their position in the firm, management tends to have more information on the firm’s operations, strategies, finances as well as all the risks the firm is exposed to. Therefore, the demand for adequate risk disclosures by shareholders through the audit committee of the board of directors appears to be an effective means of reducing information asymmetry between shareholders and management. Thus, adequate risk disclosure is a necessary mechanism for reducing information asymmetry and enhancing the objectivity, credibility and transparency of financial reporting practices of management as asserted by Deumes (2008).
2.7.4 Facilitates Financial Markets’ Efficiency

Adequate risk disclosures have been found to reduce the disparities between the perceptions of investors and expectations of management (Deumes, 2008). This enables investors to have a better judgement of the firms’ risk profile when making their decisions on the appropriateness of stock prices. Solomon et al. (2000, p. 450) argue that “as company directors are likely to be better informed of the firm’s future prospects than their investors, improving information flows between the investor and the firm will reduce information asymmetry and improve investor relations and corporate governance”.

2.7.5 Enhance Firms’ Reputation and Image

From the perspective of institutional and legitimacy theories of corporate governance, risk disclosure can be said to enhance a firm’s goodwill and reputation which help in facilitating the achievement of corporate goals with the cooperation of society at large. Hassan (2009) asserts that management and board of corporate firms tend to disclose more forwarding looking information with the aim of telling the public how well their firm is performing as a result of good managerial skills and effectiveness of the board’s monitoring and oversight roles. However, they tend to reduce the disclosure of negative information to protect their corporate image and losses in the capital market.

2.7.6 Improvement in Stock Prices

Jorion (2002) attributed the variance in stock prices of banks to their level of risk disclosures because such disclosures guided investors in terms of assessing the risk profile of firms. Also, risk disclosure enables better assessment of the firm’s future prospects by investors, regulators, and other stakeholders (Ntim, Lindop & Thomas, 2013). Hassan (2014) found that firms that
disclose more risk information have reported an increase in stock prices than non-disclosing firms.

2.8 Disincentives for Risk Disclosure

Despite the incentives for adequate risk disclosure, firms may withhold negative risk information from the public and report less of such information in their annual reports. In a mandatory disclosure regime, firms make disclosures that are mandatorily required by statutory or regulatory bodies. However, where there is a motivation to disclose more risk information than statutorily required, such disclosures are guided by the disincentives associated with risk disclosure. Directors of firms are somewhat reluctant to provide more risk information due to some disincentives associated with such practice (Aureli & Salvatori, 2012). Some of the disincentives as elaborated below include the litigation cost hypothesis, proprietary cost hypothesis, cost of producing information, and agency cost.

2.8.1 Litigation Cost

The proposition of the litigation cost hypothesis holds that firms hesitate in disclosing more risk information than mandatorily required to avoid unnecessary litigations by stakeholders who rely on such information to make legal claims (Aureli & Salvatori, 2012). Thus, managers feel reluctant to provide more risk information for fear of stakeholders using the inaccuracies or deficiencies in the report as the basis for legal claims (Linsley, Shrives & Crumpton, 2006). Also, Dobler (2008) contends that the reluctance of directors to provide risk information may be due to the uncertainty of such information, non-verifiability of the information which can lead to non-credible reporting. Therefore, to avoid litigation costs, directors are of the view that since they are not compelled by any regulation to provide more risk disclosures than legally required,
there is no need committing themselves by providing more information which may be used against them by stakeholders.

2.8.2 Proprietary Cost

A major disincentive for risk disclosure is that firms who disclose more risk information (mostly bad news) than required stand the risk of losing their competitive advantage since their competitors are likely to use such information against them. Though the emergence of corporate scandals has called for greater risk disclosures, the assumption of the proprietary cost hypothesis that firms reduce the level of risk disclosure and tend to report only forward-looking information to avoid the risk of adverse actions may limit the level of such voluntary disclosures (Onoja & Agada, 2015).

Moreover, there is a possible proprietary cost against firms that make more risk disclosures of negative information when there is the likelihood that their competitors can feed on such sensitive risk information to the latter’s advantage (Verrechia, 2001). Therefore, in the instance where firms perceive that there is a high proprietary cost associated with risk disclosure such that their competitors will use it as a tool against them, they tend to avoid or limit the disclosure of such information (Linsley & Shrives, 2005).

2.8.3 Cost of Providing Information

There is a cost incurred in providing adequate risk information in annual reports of firms and such cost can be high depending on the volume of information (Vergauwen et al., 2007). Therefore, as firms respond to the call for more voluntary disclosures of risk information, they are equally guided by the cost of producing such information. Ordinarily, where the estimated cost of making risk disclosure far outweighs its expected benefits, then there is the likelihood
that management will tend to produce less of such information to reduce cost. Also, risk disclosure consumes a lot of time and resources since it involves the identification, evaluation, measurement, analysis of risks as well as finding the appropriate means of disclosing risk information in terms of the tone of language used in reporting such information (Adamu, 2013).

2.8.4 Agency Cost

As a means of hiding management’s inefficiencies from shareholders with the aim of avoiding unnecessary attention, top management of firms tends to limit the disclosure of adverse risk information to avoid being criticized for their inefficiencies in handling the affairs of the firm. For instance, Graham et al. (2005) argue that top management and board of firms sanction less risk disclosure of negative information to avoid the situation where their managerial competence and oversight responsibilities are called to question by shareholders and other stakeholders. They argue that reducing the disclosure of less sensitive risk information may save management from a lot of questions from shareholders on management’s efficiency in managing the risk of the firm. However, since shareholders need more risk disclosures to ascertain the firm’s risk profile and be sure that their investments are safe, they tend to adopt other means of monitoring the activities of firms when they sense the situation of information asymmetry. However, the effort of shareholders in getting more information withheld from them by management comes with a monitoring cost.

2.9 International Financial Reporting Standards and Risk Disclosure

The IFRS provides a financial regulatory framework which guides firms in making financial and nonfinancial disclosures according to the regulations stipulated in the standards. However, the IFRS appears to emphasize more on financial risk disclosures remain silent on nonfinancial risk
disclosures (Dobl, 2005). For instance, Cabedo and Tirado (2004) argue that accounting standards and regulatory bodies pay less attention to nonfinancial risk information but focus much on financial risk and financial related issues as stipulated in IFRS 7 (financial instrument disclosure), and IAS 32 (financial instruments: presentation).

Notwithstanding the fact that IFRS seeks to improve the quality, credibility, and transparency of financial reporting, it appears that its focus is more on mandatory financial disclosures. As mentioned earlier, apart from IFRS 7 which makes provision for disclosure of financial risks encountered by firms, there is no explicit provision of IFRS that deal specifically with the disclosure of nonfinancial risk information. However, it must be emphasized that firms are not exposed to only financial risks but various nonfinancial risks as well. Therefore, the demand for more risk information in addition to financial risk disclosure makes it difficult for management and the board to ignore the disclosure of nonfinancial risk information.

2.10 Empirical Review of Risk Disclosure

In assessing the level of risk reporting among listed firms in the UK, Linsley and Shrives (2006) reported an average risk disclosure score of 78.0%. Again, Beretta and Bozzolan (2004) reported an overall risk disclosure index of 75.08% for Italian firms with Rajab and Handley-Schachler (2009) and Greco (2010) reporting an average disclosure score of 93.50% and 64.58% respectively. In examining the impact of audit committee characteristics on voluntary disclosures of 146 firms in Malaysian, Madi et al. (2014) reported a mean disclosure score of 58.91% for listed firms.

Compared with developing countries such as Egypt and Ghana, it can be deduced that firms in developed countries disclose more risk information in their annual reports than firms in
developing countries. For instance, while Linsley and Shrives (2006); Beretta and Bozzolan (2004); Rajab and Handley-Schachler (2009); Greco (2010) reported average risk disclosure indexes of 78.0%, 75.08%, 93.50% and 64.58% respectively for UK and Italian firms, the figures reported by Appiagyei et al. (2016); Hassan (2014) were quite low. For instance, Appiagyei et al. revealed that for the period 2004 – 2011, listed firms in Ghana disclosed on average 24.28% of risk information in their annual reports with Hassan reporting 36.0% for listed firms in Egypt.

In terms of differences in financial risk and nonfinancial risk disclosures, Lajili and Zeghal (2005) revealed that in Canada firms disclose large volume of financial risk information than nonfinancial risk information. Also, Beretta and Bozzolan (2004) reported that firms in Italy appear to disclose more financial risk information than nonfinancial risk information. Again, Madi et al. (2014) found that in Malaysia firms disclosed on average 52.65% of financial risk information as compared to 47.33% of nonfinancial risk information.

However, Linsley and Shrives (2006) found that UK firms disclose more information on nonfinancial risks such as operational risk and strategic risk than financial risk. Other studies (Konishi & Ali, 2007; Greco, 2010) found that in Japan and Italy respectively firms disclosed more nonfinancial risk information than financial risk disclosures. The results on the volume of risk disclosure in terms of financial and nonfinancial risk information are mixed.

### 2.11 Audit Committee and Corporate Governance

There is no gainsaying that the demand for good corporate governance practices across the globe is high with increasing demand for higher corporate governance standards across Europe and the Americas. Since the corporate scandals involving major international firms in the early 2000s, the expectations of stakeholders in the corporate world have never ceased to surge. The growing
public scrutiny of financial reporting practices of firms and the call for stringent regulatory rules show no signs of slowing down. As a result of these developments, the role of the audit committee has received much attention in recent times. Regulatory bodies such as the SEC of the US, the FRC of UK, and major international accounting firms such as PwC and KPMG have issued recommendations for an expansion in the role of audit committees to include not only issues relating to financial reporting but risk management and disclosures as well as other nonfinancial disclosures.

The circumstances leading to the collapse of firms like Enron and WorldCom among others imply that lack of effective corporate governance mechanism to check the activities of corporate directors can have a serious repercussion on financial reporting practices of firms. To avoid the recurrence of the corporate scandals and other financial reporting violations by directors of firms, the Sarbanes-Oxley Act of 2002 (SOX) came into force. The SOX sought to mitigate the agency problem between management of firms and their shareholders by instituting regulations that will ensure that the activities of firms are been monitored by an outside oversight body. Among the major recommendations of the SOX was the formation of the audit committee as a subcommittee of the board of directors to oversee the financial reporting practices of firms.

In the UK, the FRC (2012) describes an audit committee as a key component of the corporate governance mechanism of a firm entrusted with the responsibility of enhancing the financial reporting and internal control system of the firm. The audit committee as a subcommittee of the board of directors is entrusted with the responsibility of monitoring the financial reporting process of a firm, the effectiveness of internal control and risk management systems, and of internal audit among others (Bedard & Gendron, 2010; Li, Mangena & Pike, 2012). Moreover,
the Audit Committee Institute (ACI, 2016) asserts that an audit committee is further entrusted with the oversight responsibility of monitoring and reviewing the disclosure of a range of risks such as operational risk, compliance risk, cybersecurity risks and other risks associated with emerging technologies. This implies that as an oversight committee of the board of directors, the audit committee plays a very important role in monitoring and enhancing the risk disclosure practices of firms (Persons, 2009).

In consonance with the agency theory, an audit committee is required to perform the delegated responsibility of monitoring and enhancing both financial and nonfinancial reporting practices of the firm towards reducing information asymmetry (Akhtaruddin & Haron, 2010; Li et al., 2012). There is no doubt that when audit committees perform their oversight responsibility as required of them by SEC, SOX, FRC, and IFRS among other accounting regulations, it helps in enhancing public trust in the objectivity and transparency of financial reporting of firms (Bedard & Gendron, 2010; Kelton & Yang, 2008).

In the US, the SOX recommends that audit committees should be composed mainly of independent non-executive directors with at least one of the members having some appreciable level of financial expertise. Similarly, the FRC (2012) emphasizes not only the importance of audit committees as a key corporate governance mechanism but suggests how the audit committee should be constituted to enhance its effectiveness. The FRC recommends that membership of an audit committee should be at least three or in the case of smaller firms, two independent directors. However, it contends that large firms are encouraged to have large audit committees since this enhances the diversity of expertise of the committee. In terms of financial
expertise, the FRC suggests that the membership of the committee must include at least one person with some considerable amount of financial expertise.

2.12 Empirical Review and Hypothesis Development

Over time, audit committees have been entrusted with the oversight responsibility of monitoring and improving a firm’s risk management and disclosure practices (Karamanou & Vafeas 2005; Viljoen et al., 2016). Therefore, researchers have sought to examine how the role of audit committees enhances risk disclosure. Prior studies on audit committee and voluntary disclosures (see Akhtaruddin & Haron, 2010; Bedard et al., 2004; Chapple, Jubb & Lee, 2012; Madi et al., 2014; Persons, 2009) have suggested that the ability of an audit committee to perform its role as expected is dependent on its characteristics such as size, gender diversity, frequency of meetings, financial expertise, and independence. Thus, audit committees with the right combination of characteristics are likely to perform their oversight responsibilities effectively.

Though several studies have examined the impact of audit committee characteristics on voluntary disclosures, such studies have not considered risk disclosure in specificity. At best, studies that considered risk disclosure seem to focus on financial risk disclosures but not nonfinancial risks such as operational risk, strategic risks, compliance and integrity risks among others. Therefore, this study examines the effect of audit committee characteristics on risk disclosure using five audit committee characteristics as proxies – the size of audit committee, frequency of meetings, financial expertise, gender diversity, and independence of audit committee. It must be emphasized that in addition to the five characteristics outlined, other studies included characteristics such as multiple directorships of members (see Madi et al., 2014) and tenure of the committee (see Alzeban & Sawan, 2015; Othman et al., 2014) in their analysis.
However, since the researcher did not have the benefit of a reliable database from which he could cross-check multiple directorship status of audit committee members, this characteristic was excluded. Also, the tenure of audit committee was excluded for lack of information on tenure in the annual reports of majority of the firms used for the analysis. Hence, the study relied on the five aforementioned audit committee characteristics for the analysis. The following hypotheses as presented below were developed based on the mixed results of prior studies that sought to examine the impact of audit committee characteristics on voluntary disclosures.

**Size of Audit Committee and Risk Disclosure**

The size of an audit committee is a very important characteristic that must be taken into consideration when constituting an audit committee as stipulated by the FRC (2002), SEC and SOX (2002). In examining the effect of the size of audit committee on voluntary disclosures, Persons (2009) found that large size audit committees appeared to enhance the volume of voluntary disclosures. Li et al. (2012) reported a positive relationship between size of audit committee and intellectual capital disclosure among 100 listed firms in the UK. Appuhami and Tashakor (2017) found a significant positive relationship between size of audit committee and the level of corporate social responsibility (CSR) disclosure by listed firms in Australia. Chapple et al. (2012) found a positive relationship between size of audit committee and environmental disclosure. Furthermore, Abraham and Cox (2007); Madi et al. (2014); Neri (2010); Viljoen et al. (2016) found a significant positive relationship between audit committee size and voluntary disclosure. Similarly, Cornett et al. (2009); Yang and Krishnan (2005) found a significant positive relationship between size of audit committee and earnings management.
On the contrary, Muzahem (2011) found no significant association between size of audit committee and risk disclosure. Mangena and Pike (2005) found no significant relationship between size of audit committee and voluntary disclosure. In other studies, Othman et al. (2014) found no significant association between size of audit committee and voluntary ethics disclosure while Huang and Thiruvadi (2008) found no significant relationship between size of audit committee and fraud prevention. Given the mixed findings on the relationship between size of audit committee and voluntary disclosures, the study hypothesizes that:

\[ H_{1a}: \text{There is a relationship between size of audit committee and the quantity of risk disclosure} \]

\[ H_{1b}: \text{There is a relationship between size of audit committee and the quality of risk disclosure} \]

**Frequency of Audit Committee Meetings and Risk Disclosure**

Frequency of meetings as a characteristic of audit committee refers to the number of meetings held by an audit committee within the financial year. Generally, the number of audit committee meetings is determined by the board of directors before the beginning of the financial year. However, the FRC (2008) recommends that since audit committee meetings are the core of its work, members should endeavour to meet regularly within the financial year to allow them ample time to thoroughly scrutinize the issues entrusted to them by the board of directors. Similarly, Karamanou and Vafeas (2005); Li et al. (2012) contend that members should meet regularly within the year to enable them to perform their monitoring roles effectively.

It is believed that frequent meetings of audit committees provide members the laxity to monitor, discuss and critically examine the financial reporting practices and internal control systems and
other voluntary disclosure issues presented to them (Allegrini & Greco, 2011; Greco, 2011). Moreover, while there is no universally recommended number of audit committee meetings, professional accounting firms such as PwC and KPMG recommend a minimum of three or four meetings within a financial year.

Empirical studies on the relationship between the frequency of meetings of audit committees and voluntary disclosures are mixed. For instance, Appuhami and Tashakor (2017) found a significant positive association between frequency of audit committee meetings and CSR disclosures among listed firms in Australia. This implies that regular meetings of audit committees give members the laxity to critically scrutinize the annual reports of firms in order to convince themselves that the reports have addressed all the major issues relating to CSR disclosures. Allegrini and Greco (2011) provided evidence to support the assertion that frequent meetings of audit committees at least four times during the year could help to improve upon the level of voluntary disclosures. In addition, Li et al. (2012) found a significant positive association between regular meetings of audit committees and the level of intellectual capital disclosure. Karamanou and Vafea (2005) reported that audit committees that met four times or more were found to help enhance the level of CSR disclosures. Furthermore, Kelton and Yang (2008) found a significant positive relationship between frequency of audit committee meetings and internet financial disclosure. Based on the findings of the aforementioned studies, the study hypothesizes that:

\[ H_{2a}: \text{There is a relationship between frequency of meetings of audit committee and the quantity of risk disclosure} \]

\[ H_{2b}: \text{There is a relationship between frequency of meeting of audit committee and the quality of risk disclosure} \]
Financial Expertise of Audit Committees and Risk Disclosure

The financial expertise of an audit committee relates to the proportion of members with finance or accounting expertise. Since the work of the audit committee involves the examination of the financial statements and other financial related issues, it is expected that an audit committee should have at least one of its member being a financial/accounting expert (Dhaliwal, Naiker & Navissi, 2010). It is believed that members with sound knowledge and expertise in finance or accounting can really appreciate the implications of good financial reporting and compliance with relevant financial reporting regulations (Mangena & Tauringana 2007).

It is believed that members with financial expertise will seek to thoroughly examine the financial reports of the firm by asking relevant questions that bother on the quality of financial reporting and internal controls (Bedard & Gendron, 2010). This will help in enhancing the quality, credibility and transparency of financial reporting. Moreover, Agrawal and Chadha (2005) contend that audit committees with majority of its members lacking financial/accounting expertise are likely to overlook some financial reporting violations since they may be oblivious of the implications of such violations. However, audit committees with financial expertise will ordinarily scrutinize financial reporting practices of the firm with the aim of improving upon their quality and credibility being mindful of the capital market implications of financial reporting and risk disclosures.

Prior studies provide evidence to prove that audit committees with majority of their members being financial experts were effective in enhancing the volume of voluntary disclosures (Akhtaruddin & Haron, 2010) and quality of financial reporting (Kent, Routledge, & Stewart, 2010; Kelton & Yang, 2008). Chapple et al. (2012) reported a significant positive relationship
between financial expertise of audit committee and environmental disclosure. Also, Akhtaruddin and Haron (2010) reported a positive relationship between financial expertise of audit committee members and the quality of risk disclosure. Similarly, Huang and Thiruvadi (2008) found a significant relationship between audit committee’s financial expertise and fraud prevention. Again, Li et al. (2012) found a strong positive relationship between audit committees with adequate financial expertise and improved intellectual capital disclosure.

In contrast, Appuhami and Tashakor (2017) found no strong relationship between financial expertise of members of audit committees and the level of CSR disclosure. Again, Madi et al. (2014) found no significant relationship between financial expertise of audit committee and corporate voluntary disclosure. Furthermore, in examining the influence of audit committee characteristics on voluntary ethics disclosures by listed firms in Malaysia, Othman et al. (2014) found no significant relationship between financial expertise of audit committee and voluntary ethics disclosure. Hence, considering the mixed results from prior studies, the study hypothesizes that:

\[ H_{3a}: \text{There is a relationship between financial expertise of audit committee and the quantity of risk disclosure} \]

\[ H_{3b}: \text{There is a relationship between financial expertise of audit committee and the quality of risk disclosure} \]

**Gender Diversity of Audit Committee and Risk Disclosure**

In recent times, a lot of studies on board characteristics and group dynamics tend to examine the influence of gender on corporate decisions with some of these studies looking at gender diversity of audit committees and its influence on the role of the committee. Gender diversity may be
referred to as the mix of males and females on the board of directors and the audit committee in specificity. Appuhami and Tashakor (2017) used gender diversity as a proxy in examining audit committee’s influence on the level of CSR disclosure by Australian firms by arguing that gender diversity brings on board important human resource and varied opinions that help to improve the work of audit committees and the quality of decisions.

Similarly, Bernardi et al. (2002) contend that gender diversity appears to be a very important human characteristic that improves the effectiveness and enhances the decisions of audit committees due to the diversity of opinions from male and female members. Concurring with the assertion of Bernardi et al. (2002), Gul et al. (2011) argue that gender diversity improves the level of discussion and debate on sensitive and emotional issues which may not gain much attention from an all-male audit committee. Moreover, female directors on audit committees are found to be very open and freely ask a lot of questions with the aim of seeking better clarifications when they are not convinced with the answers provided (Walt & Ingley 2003). Furthermore, Dennis and Kunkel (2004) posit that female directors are very stable, calm and less aggressive in their decisions as compared to their male counterparts. This helps to enrich the discussions of the committee thereby improving its effectiveness.

Prior empirical studies have proven that gender diversity of audit committees improves the level and quality of voluntary disclosures. For instance, Appuhami and Tashakor (2017) found that gender diversity has a significant influence on the level of CSR disclosure. Huang and Thiruvadi (2008) assert that female directors on audit committees may be more sensitive in their analysis of financial statements of firms to ensure the credibility of financial reporting than their male counterparts. Using one-way ANOVA to test the effect of gender on the effectiveness of audit
committees, Huang and Thiruvadi (2009) reported variations in the reports of audit committees with more gender diversity than male-only audit committees. Also, Uzliawati, Suhardjanto and Djati (2014) reported that audit committees with greater gender diversity experienced an improvement in intellectual capital disclosure by banking firms in Indonesia. However, Smith, Smith, and Verner (2006) reported an insignificant relationship between gender of audit committee and voluntary disclosure. Based on these findings, the study hypothesizes that:

\[ H_{4a}: \text{There is a relationship between gender diversity of audit committee and the quantity of risk disclosure} \]

\[ H_{4b}: \text{There is a relationship between gender diversity of audit committee and the quality of risk disclosure} \]

**Independence of Audit Committees and Risk Disclosure**

The independence of an audit committee is determined by the proportion of non-executive directors or independent outside directors constituting its membership. Audit committees are required to be composed of independent directors who cannot be easily influenced by management in the course of performing their oversight monitoring role of enhancing quality financial reporting and internal controls (Fama & Jensen, 1983).

The findings on the relationship between independence of audit committee and voluntary disclosures are mixed. For instance, Akhtaruddin and Haron (2010); Mangena and Tauringana (2007); Patelli and Prencipe (2007) found that independence of audit committee is positively associated with improved voluntary disclosures. Madi et al. (2014) found that independent audit committees effectively monitor and oversee corporate disclosure practices of firms hence enhance voluntary disclosures. Razali and Arshad (2014); Lajili and Zeghal (2011) reported a
positive association between independence of audit committees and quality of financial reporting. Also, Duchin et al. (2010) opine that a large number of non-executive directors of an audit committee would enhance the objectivity, reliability, and transparency of the firm’s financial reporting and voluntary disclosures. Chapple et al. (2012) found a significant relationship between audit committee independence and environmental disclosure. Furthermore, Htay et al. (2012); Taylor (2011) reported that the presence of non-executive directors on audit committees enhances voluntary disclosure.

However, Li et al. (2012) found no strong relationship between independence of audit committee and intellectual capital disclosure. Also, Yang and Krishnan (2005) found no significant association between audit committee independence and earnings management. Haat, Rahman and Mahenthiran (2008); Ismail and Rahman (2011) reported that there is no significant relationship between the number of non-executive directors on audit committees and voluntary disclosures. Therefore, the study hypothesizes that:

\[ H_{5a}: \text{There is a relationship between independence of audit committee and the quantity of risk disclosure} \]

\[ H_{5b}: \text{There is a relationship between independence of audit committee and the quality of risk disclosure} \]

**Control Variables**

Prior studies have revealed that firms’ disclosure choices are sticky over time suggesting that unidentified firm-specific characteristics and corporate governance variables may affect disclosure choices (Bamber, et al., 2010). In this regard, it was necessary to control for some firm-specific characteristics that have been found to have a strong influence on risk disclosure to
avoid the likelihood of misattributing the effects of such variables to the independent variables used in the study. Hence, to isolate the likely effect of some of the known major determinants of risk disclosure, two firm-specific variables: firm size and industry type were integrated into the regression model as control variables.

**Size of Firm and Risk Disclosure**

Prior studies have reported a significant positive relationship between firm size and the level of risk disclosure (Beattie et al., 2004; Deumes & Knechel, 2008; Li et al. 2008; Mangena & Pike 2005; Mohobbot 2005). For instance, Beattie et al. (2004); Deumes and Knechel (2008); Mohobbot (2005) found a positive relationship between firm size and the level of risk disclosure. In addition, drawing on the stakeholder theory, Amran et al. (2009) found that larger firms disclose more risk information as a way of satisfying the information needs of their stakeholders. Hassan (2014) attributes the positive relationship between firm size and level of risk disclosure to the fact that large firms have the financial muscle to spend more on information production and distribution as compared to smaller firms. He adds that large firms may face challenges relating to information asymmetry and agency costs and in an attempt to mitigate such challenges they tend to disclose more risk-related information.

**Industry Type and Risk Disclosure**

Industry type has been revealed as a major determinant of risk disclosure (Rajab & Handley-Schachler, 2009). Hassan (2009) postulates that firms in different industries are exposed to some risks that are peculiar to the industry. Also, several risk disclosure studies have confirmed that differences in industry regulations and operations affect the extent of risk disclosure by firms across industries. For example, Amran et al. (2008) found a significant relationship between
nature of the industry in which a firm operates and the level of risk disclosure. Lim et al. (2007) postulate that nonfinancial firms otherwise known as industrial firms face diverse categories of risks as compared to financial firms and for that matter disclose varied risk information.

2.13 Conceptual Framework

Drawing on the agency theory, the study seeks to establish a relationship between risk disclosure and audit committee characteristics. This is based on the premise that an audit committee of the board of directors serves as a corporate governance mechanism that monitors the risk disclosure practices of firms. In this regard, the conceptual framework as presented in Figure 2.1 shows the relationship between risk disclosure and audit committee characteristics.

Figure 2.1: Conceptual Framework

Independent Variables

- Size of Audit Committee
- Independence of Audit Committee
- Financial expertise of Audit Committee
- Gender Diversity
- Frequency of Meetings

Dependent Variables

- Risk Disclosure (Quantity and Quality)
- Firm Size
- Industry Type

Control Variables
The conceptual framework as presented in Figure 2.1 is an emerging framework developed by the researcher based on the hypotheses underpinning the study. The framework aims at establishing a relationship between the dependent variables (quantity and quality of risk disclosure) and the independent variables (size of audit committee, independence of audit committee, financial expertise of audit committee, gender diversity of audit committee, and frequency of meetings of audit committee). From this point, the framework draws on the agency theory to establish that, when the right combination of characteristics of an audit committee are met, an audit committee can serve as an effective corporate governance mechanism that strongly influences the quantity and quality of risk disclosure by listed firms. Also, the framework depicts the relationship between two major firm specific characteristics (firm size and type of industry) used as control variables. Over time, these two control variables have been found to have a strong influence on risk disclosure. This makes it necessary to control for them in a study of this nature in order not to misattribute their effect on risk disclosure to the audit committee characteristics used in the study.

2.14 Chapter Summary

The chapter involved a review of relevant literature on effect of audit committee characteristics on risk disclosure. Specifically, the chapter focused on thematic areas such as the concept of risk, classification of risk, the concept of risk disclosure, determinants of risk disclosure, motivations for risk disclosure, disincentives for risk disclosure, international financial reporting standards and risk disclosure, empirical review on risk disclosure, audit committees characteristics and risk disclosure, as well as the development of research hypotheses and the theoretical framework that underpinned the study.
The literature review showed that risk disclosure has gained considerable attention in the accounting literature. Adequate risk disclosure was found to be essential in that investors need risk information of firms to determine their risk profile, the accuracy of stock prices and evaluate its market value. Therefore, investors continue to demand more risk information to help them assess a firm’s risk profile and make informed decisions. The demand for additional risk disclosures is anchored on the assertion that such practice will help to improve the corporate governance system and eliminate information asymmetries in the capital market. Extant literature on risk disclosure appears to address the effect of corporate governance factors and firm-specific characteristics on risk disclosures but with limited studies on the effect of audit committee characteristics and risk disclosure.
CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter outlines the methodology adopted for the study. It presents and discusses the research paradigm and approach employed for the study, the sample selection procedures and source of data. In addition, the chapter involves a description of the variables used in the regression model and how they were measured. Furthermore, the chapter presents the data analysis techniques employed to analyze the quantity and quality of risk disclosure as well as test the hypotheses that underpin the study.

3.2 Research Paradigm and Research Approach

In conducting research, it is necessary to outline the philosophical worldview that underpins the study (Boateng, 2014). The philosophical worldview or assumption of research is commonly referred to as research paradigm. Hussey and Hussey (1997, p. 47), define research paradigm as “the process of scientific practice based on people’s philosophies and assumptions about the world and the nature of knowledge”. The philosophical assumption of the study logically connects the entire research process from the conceptualization of the subject of study (problem), through data collection and analysis, to interpretation and discussion of results (Merriam, 1988).

Over time, various research paradigms have evolved around two main branches of philosophy – ontology and epistemology (Blaikie, 1993). Drawing on these two branches of philosophy, several research paradigms have been propounded with the major ones being positivism, interpretivism, and critical realism (Kuhn, 1970), post-positivism (Denzin & Lincoln, 1994), and positivism, interpretivism, critical theory and critical realism (Myers & Avison, 2002). Other paradigms used in research include post-positivism, constructivism, advocacy/participatory,
pragmatism (Creswell, 2007), positivism, interpretivism, realism, critical realism (Fisher, 2010).

In choosing the appropriate research paradigm for a study, Boateng (2014) suggests the following guiding principles: a researcher’s philosophical views of the world, the research topic of interest, the available empirical literature related to the topic, and the abilities and limitations of the researcher concerning the methods of data analysis. Extant literature has revealed that the two main philosophical assumptions employed by social science researchers are the positivist and interpretive paradigms (Wong, 2012). Moreover, Hesse-Biber and Leavy (2006) argue that depending on the type of research approach that one may adopt (whether quantitative, qualitative, or mixed methods approach), the common paradigms employed in management and social science research are the positivism and interpretivism. Therefore, in this study, the researcher employed the positivist paradigm as the philosophical worldview that underpins the study. The choice of this paradigm was based on the premise that positivism is characteristically deductive and is most appropriate for quantitative research as posited by Fisher (2010).

Generally, researchers are faced with two major approaches to research depending on how they intend to collect and analyze data. The two main approaches to research are qualitative approach and quantitative approach (Creswell, 2012; Fellows & Liu 2003; Naoum 2007). However, the choice of a research approach largely depends on the research paradigm adopted, the specific objectives that the study is set out to achieve, as well as the methods of data collection and analysis. Therefore, considering the specific objectives of the study and the fact the study draws on the positivist worldview of social reality, the quantitative approach was deemed appropriate for the study. This approach was adopted on the premise that it involves the testing of hypothesis to confirm or reject a theory, and allows the manipulation of large data using statistical
techniques to permit relevant conclusion for the purpose of generalization (Phoya, 2012).

3.3 Sample Selection Procedure

The target population comprised all 40 listed firms on the Ghana Stock Exchange (GSE) as at December 2016. The industry distribution of the sampled firms is as follows:

Table 3.1. Industry Distribution of Sampled Listed Firms

<table>
<thead>
<tr>
<th>Industry</th>
<th>No. of Firms</th>
<th>No. included in Sample</th>
<th>% of Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>4</td>
<td>4</td>
<td>13.3</td>
</tr>
<tr>
<td>Food and Beverage</td>
<td>6</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>16</td>
<td>10</td>
<td>33.3</td>
</tr>
<tr>
<td>Mining and Petroleum</td>
<td>4</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Trading and Distribution</td>
<td>4</td>
<td>4</td>
<td>13.3</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>2</td>
<td>2</td>
<td>6.8</td>
</tr>
<tr>
<td>Information Technology</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Printing and Publishing</td>
<td>2</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>30</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Researcher’s Own Construct

The sample for the study comprised 30 listed firms selected from seven major industries. The firms that made up the sample were selected based on a three-point criteria: date of listing, availability of information on audit committee characteristics, and availability of annual reports for most of the years that the firm has been listed.
Table 3.2. Sample Selection Criteria

<table>
<thead>
<tr>
<th>Sampling Criteria</th>
<th>No. of Listed Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial population as at 31st December 2016</td>
<td>40</td>
</tr>
<tr>
<td>Less: Firms listed in 2016</td>
<td>(2)</td>
</tr>
<tr>
<td>Less: Firms without information on audit committees</td>
<td>(4)</td>
</tr>
<tr>
<td>Less: Firms without available annual reports</td>
<td>(4)</td>
</tr>
<tr>
<td>Final sample used for analysis</td>
<td>30</td>
</tr>
</tbody>
</table>

**Source: Researcher’s Own Construct**

Using the criterion - date of listing, two firms (Access Bank Ghana Limited and Agricultural Development Bank) were excluded from the sample because they were listed in 2016. This is as result of the fact that the date of listing was outside the study period (2003 - 2015). Based on the second criterion - availability of information on audit committee characterisites, four firms (Clydestone Ghana Limited, Transol Solutions Ghana Limited, Mega African Capital Limited and Sam Woode) were excluded from the sample for lack of information on audit committee characteristics in their annual reports. This is because the focus of the study was on audit committee characteristics and for that matter annual reports of firms without information on audit committee characteristics were somewhat irrelevant to the study. Furthermore, four other firms (NewGold Issuer Limited, AngloGold Ashanti Limited [AADS], EcoBank Transnational Incorporated, and Standard Chartered Bank Ghana Limited [Preference Shares]) were excluded from the sample because of unavailability of annual reports. It must be emphasized that apart from information on audit committee characteristics the study relied on the narrative section of annual reports of firms as assess the volume and quality of risk disclosure. Hence, firms without
available annual reports could not be included in the sample. Therefore, a total of 10 firms were excluded from the sample leaving 30 firms which were used for the analysis. The list of firms included in the sample is presented in Appendix 1.

The study period of 2003 – 2015 was chosen based on two major factors. Firstly, the starting year of 2003 was selected because the earliest date for the available annual reports for the sampled listed firms was 2003. Thus, the annual reports for years preceding 2003 were unavailable hence the choice of the year 2003 as the starting year. With regards to the ending year i.e 2015, the study was started in August 2016 and so the latest available annual reports for the sampled firms were for the year 2015. Hence, the choice of 2015 as the ending year.

3.4 Sources of Data

The main source of data was annual reports of sampled listed firms for the period 2003 - 2015. The annual reports of listed firms were collected from the website of the GSE, individual firms’ websites and annualreportsghana.com. The choice of annual reports was based on the premise that both management and stakeholders consider annual reports as the formal medium for communicating detailed and very important information about the activities and performance of corporate firms (Beretta & Bozzolan, 2004; Botosan, 1997). Also, prior studies have justified the use of annual reports as a more credible source of corporate information on both financial and nonfinancial disclosures (Gray et al. 1995). Annual reports constitute a major source of voluntary disclosures for various stakeholders and especially for investors and regulators (Zégal, Mouelhi & Louati, 2007). In addition, several studies on risk disclosure have used annual reports as the main source of risk information disclosed by firms (see Abraham & Cox, 2007; Bonaci, Strouhal & Mustata, 2013).
3.5 Development of Risk Disclosure Indexes

By far, studies on risk disclosure aim at developing a disclosure index to measure the extent of disclosure by firms and this study is no different. In this study, a basic step towards the development of a risk disclosure index was the selection of risk items disclosed in annual reports of the sampled listed firms. Various techniques have been developed for the selection of risk items for risk disclosure index. For instance, Beattie, McInnes and Fearnley (2004) present two major categories of techniques for analyzing the nonfinancial information in the narrative section of annual reports – the subjective approach (analyst ratings) and semi-objective approach (content analysis, readability studies, and linguistic analysis). However, over time the most widely used technique for the selection of risk items in annual reports for risk disclosure studies has been the content analysis technique.

Content analysis is a method of codifying text into categories depending on predetermined selection criteria (Milne & Adler, 1999). As a method of analysis, content analysis involves “the analysis of manifest and latent content of a report or textual material through classification, tabulation, and evaluation of its key symbols and themes in order to ascertain its meaning and probable effect” (Kongprajya, 2010, p 56). Thus, it is the analysis of documents and texts in a systematic and replicable manner to identify a particular content with reference to predetermined categories.

The study adopted the content analysis technique to analyze quantity and quality of risk disclosure in annual reports of the sampled listed firms. Several studies on risk disclosures (see Ali & Taylor, 2014; Al-Hadi, Hasan & Habib, 2015; Al-Hadi, Taylor & Hossain, 2015; Beretta & Bozzolan, 2004; Linsey & Shrives, 2006) employed content analysis as the most appropriate
technique for analyzing risk disclosures in annual reports. This technique has been widely adopted by researchers because it is deemed to be the most suitable technique for analyzing nonfinancial information in annual reports. Despite its wide use in risk disclosure studies, the technique is criticized for lacking transparency in the identification, selection, and categorization of information; and deemed to be highly subjective (Beattie & Thomson, 2007). In the light of these criticisms, a three-step procedure was adopted to enhance the reliability of the technique.

The first step towards conducting a reliable content analysis was the selection of a unit of analysis (unit of scale). Milne and Adler (1999) contend that defining the unit of analysis is very necessary for content analysis because it forms the basis for coding decisions since reliability is concerned with coding errors, not measurement errors. Though there are different units of analysis when conducting content analysis, Gray, Kouhy and Lavers (1995) posit that the most preferred unit of analysis tend to be word, sentence and page proportions.

Some prior studies on risk disclosure (see Abraham & Cox, 2007; Beretta & Bozzolan, 2004; Linsley & Shrives, 2006) adopted the sentence approach as the unit of coding in selecting risk items. Also, Milne and Adler (1999, p. 243) argue that “as a basis for counting, sentences are far more reliable than other units of analysis”. Hence, the sentence approach was adopted as the unit of analysis of risk items in the annual reports because, without a sentence, individual words or phrases lack meaning and may not provide any meaningful basis for coding risk items (Oliveira, Rodrigues & Craig, 2011). In using the sentence approach as a unit of analysis, sentences containing risk items directly or impliedly were counted to arrive at the volume of risk disclosed on each risk category by each sampled listed firm.

Secondly, for easy identification and coding of risk-related sentences in the narrative section of
the annual reports, it was necessary to use a risk disclosure framework or checklist as a guide. While some studies have adapted risk disclosure checklists developed by prior researchers, others have used self-constructed checklists (see Ali & Taylor, 2014; Hossain and Taylor, 2007; Hossain, 2008; Linsey & Shrives, 2006; Probohudono, Tower & Rusmin, 2013).

While majority of recent disclosure studies have adopted the six-risk category disclosure framework by Linsley and Shrives (2006), the study adapted a modified version of the risk disclosure checklists of Linsley and Shrives (2006); Greco (2012). The risk disclosure checklist was developed based on the risk disclosure frameworks of Linsley and Shrives (2006); Greco (2012) but with major modifications to the risk categories and risk items. The checklist consisted of four major risk categories - financial risk, strategic risk, operational risk, and compliance and integrity risk, with a total of 35 risk disclosure items. The financial risk category comprised five risk disclosure items, the strategic risk category comprised eight risk disclosure items, the operational risk category comprised 14 risk disclosure items, and the compliance and integrity risk category comprised eight risk disclosure items. Each of the four risk categories had its own disclosure index computed separately with a final aggregate risk disclosure index (RDIQuantity) computed for all the four risk categories across all the sampled listed firms. The risk disclosure checklist used for the content analysis is presented in Appendix 2.

The study employed the risk disclosure quality framework of Hassan (2014) which was designed based on the conceptual framework for financial reporting issued by IASB and FASB (2010) (see Appendix 3). Drawing on Hassan’s framework, quality of risk disclosure was assessed using four quality parameters: relevance, understandability, comparability, and verifiability. The “relevance” parameter comprised five quality variables. The “understandability” parameter
comprised seven quality variables. The “comparability” parameter comprised seven quality variables. The “verifiability” parameter comprised four quality variables. In all, the risk disclosure quality framework comprised 22 disclosure items on the quality of risk disclosure.

With regards to the reliability of content analysis, extant literature has revealed that the widely used approaches for coding or scoring risk items to determine the volume of disclosure are weighted approach and unweighted approach. However, for this study the unweighted approach was adopted using a dichotomous scale which scores a risk item as 1 if the item is disclosed, and 0 otherwise. The unweighted scoring approach was adopted to avoid the subjectivity inherent in using the weighted scoring approach. The total number of risk items disclosed by each firm was divided by the total expected maximum score to arrive at the risk disclosure index for the firm.

Moreover, since the content analysis was carried out by a single coder (the researcher), stability was adopted to measure the reliability of the results. In using a single coder, Linsley and Shrives (2006) opine that the reliability of the coding process can be improved by constructing decision rules that can be used as a guide. The decision rules by Vandemele et al. (2009) were adapted for the study (see Decision rules in Appendix 4). Since subjectivity in coding is unavoidable as the definition of risk itself is open to different interpretations, the decision rules were necessary to enhance consistency in the coding process (Linsley & Shrives, 2006). The coding decision rules were tested twice at different times with eight annual reports from two firms. The first coding was performed and the results were recorded for each of the firms. The coding process was repeated on the same annual reports using the same coding decision rules after three weeks of the first coding and the results recorded. The results from the two codings were compared to ascertain any variations. However, the results of the comparison showed no significant
differences in the two coding results. Hence, the single coder approach was deemed appropriate in terms of enhancing the reliability of the coding process.

3.6 Description and Measurement of Variables

The dependent variables for the study were risk disclosure indexes for quantity of risk disclosure (RDIQuantity) and quality of risk disclosure (RDIQuality). For quantity of risk disclosure, a risk item disclosed was scored 1 and an item not disclosed was scored 0. The maximum expected number of risk items to be disclosed by a firm was 35. The maximum risk disclosure index for each firm was 1 while the minimum was 0. A high disclosure index for a firm shows high-risk disclosure while a low-risk disclosure index shows low volume of risk disclosure. A risk disclosure score of 0 represents non-disclosure of risk. The quantity of risk disclosure index was calculated as follows:

\[
RDI_{Quantity} = \frac{\text{Actual number of risk items disclosed}}{\text{Maximum number of risk items to be disclosed}}
\]

Where RDIQuantity is the overall index for quantity of risk disclosure

For quality of risk disclosure index, the quality of disclosure item was scored 1 and a quality item not disclosed was scored 0. The maximum expected number of risk quality items to be disclosed by each firm was 22. The maximum risk disclosure index expected for quality of risk disclosure for each firm was 1 while the minimum was 0. Mathematically, the quality of risk disclosure index was computed as follows:

\[
RDI_{Quality} = \frac{\text{Actual number of risk quality variables}}{\text{Maximum number of risk quality variables}}
\]

Where RDIQuality is the overall index for quality of risk disclosed
The independent variables used in the regression models comprised five audit committee characteristics (size of audit committee, frequency of meetings, financial expertise, gender diversity, and independence of audit committee). Two firm-specific characteristics (size of firm and industry type) were used as control variables. Table 3.3 presents the definition and measurement of the variables.

Table 3.3: Description and Measurement of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition of Variable</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDIQuantity</td>
<td>Quantity of risk disclosure index</td>
<td>1 if risk item is disclosed in annual report</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 if risk item is not disclosed in annual report</td>
</tr>
<tr>
<td>RDIQuality</td>
<td>Quality of risk disclosure index</td>
<td>1 if quality of risk item is disclosed in annual report</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 if quality of risk item is not disclosed in annual report</td>
</tr>
<tr>
<td>SIZE</td>
<td>Size of audit committee</td>
<td>Number of audit committee members</td>
</tr>
<tr>
<td>FREQ</td>
<td>Frequency of meetings</td>
<td>Number of audit committee meetings in a year</td>
</tr>
<tr>
<td>GEN</td>
<td>Gender diversity of audit committee</td>
<td>1 if committee has both female and male membership, and 0 otherwise</td>
</tr>
<tr>
<td>EXPERT</td>
<td>Financial expertise of audit committee</td>
<td>Percentage of directors with accounting or financial expertise</td>
</tr>
<tr>
<td>INDEP</td>
<td>Non-executive independent directors</td>
<td>Percentage of non-executive directors on audit committee</td>
</tr>
<tr>
<td>FSIZE</td>
<td>Size of firm</td>
<td>Natural logarithm of total assets of the firm</td>
</tr>
<tr>
<td>IND</td>
<td>Type of industry</td>
<td>1 if nonfinancial firm, and 0 otherwise</td>
</tr>
</tbody>
</table>

Source: Researcher's Own Construct

3.7 Model Specification and Diagnostic Tests

The study employed panel regression analysis to examine the relationship between audit committee characteristics and risk disclosure. The first regression model - Model 1, examined
the relationship between quantity of risk disclosure and audit committee characteristics. The second regression model - Model 2, examined the relationship between quality of risk disclosure and audit committee characteristics.

\[ RDI_{Quantityit} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 FREQ_{it} + \beta_3 EXPERT_{it} + \beta_4 GEN_{it} + \beta_5 INDEP_{it} + \beta_6 FSIZE_{it} + \mu_i + \nu_{it} \]  

\[ RDI_{Qualityit} = Y_0 + Y_1 SIZE_{it} + Y_2 FREQ_{it} + Y_3 EXPERT_{it} + Y_4 GEN_{it} + Y_5 INDEP_{it} + Y_6 FSIZE_{it} + Y_7 IND_{it} + \mu_i + \nu_{it} \]

Where:  
- \( RDI_{Quantityit} \): Overall index for quantity of risk disclosure by sampled listed firms  
- \( RDI_{Qualityit} \): Overall index for quality of risk disclosure by sampled listed firms  
- \( i = 1, ..., n \) = the cross-sectional unit  
- \( t = 1, ..., T \) = time index  
- \( \beta_0, Y_0 \) = constant or intercept  
- \( u_i \) = individual firm-specific error component  
- \( \nu_{it} \) = idiosyncratic disturbance term

In conducting a panel regression, it is necessary to establish that the data used for the regression is normal without any outliers that will make it skewed. To check whether the data used for the analysis was normal and appropriate for a meaningful analysis, a skewness and kurtosis test for normality was conducted. As a rule of thumb, it is expected that normal data should have the values for skewness and kurtosis close to zero. Thus, if the values are not close to zero, then the data cannot be said to be normally distributed. For instance, Field (2009) asserts that to determine the normality of data using skewness and kurtosis, the value of skewness (asymmetry) and kurtosis should be zero or close to zero. He contends that when the value is greater than 1.96
for skewness and 3.29 for kurtosis, it means the data is not normally distributed. However, the skewness and kurtosis test for normality as presented in Appendix 5 shows that the values for skewness and kurtosis for all the variables were less than 1. This implies that the data used for the analysis was highly normal.

Also, the need to check whether the independent variables were highly correlated leading to the problem of multicollinearity was underscored. In testing for the assumption of multicollinearity, O’Brien (2007) posits that if the variance inflation factor (VIF) of an independent variable is greater than 10 (VIF > 10), then there is an indication that the case of multicollinearity exists which can affect the coefficient estimates of the independent variables. Based on the fact that the VIFs for all the independent variables as presented in Table 4.3 and Table 4.4 respectively were below 10, it was assumed that there was no case of multicollinearity among the independent variables used in the regression models.

In testing for the existence of heteroscedasticity, the results for the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity for both models required that the null hypothesis of constant variance should be accepted at 1% significance level. This suggests that there was no problem of heteroskedasticity in the two models.

In addition, the researcher conducted the Wooldridge test for autocorrelation to check if the independent variables in the regression models were serially correlated. However, the test results required that the null hypothesis of no first-order autocorrelation be accepted for both models at a 1% level of significance. Hence, it was established that there was no case of autocorrelation among the independent variables in the two models.
In conducting a Hausman specification test to check which of the two model specifications (fixed effects or random effects) was suitable for the panel regression, the test results for both models produced insignificant p-values. Thus, Model 1 (quantity of risk disclosure) produced a p-value of 0.5440 while Model 2 (quality of risk disclosure) produced a p-value of 0.1136. Based on the p-values, the random effects model was deemed appropriate for both regressions. Hence, the following econometric models were formulated in line with the random effect model specifications.

\[
\text{RDQuantity}_{it} = \beta_0 + \beta_1 \text{SIZE}_{it} + \beta_2 \text{FREQ}_{it} + \beta_3 \text{EXPERT}_{it} + \beta_4 \text{GEN}_{it} + \beta_5 \text{INDEP}_{it} + \beta_6 \text{FSIZE}_{it} + \gamma_i + \delta_i \]

\[
\text{RDIQuality}_{it} = Y_0 + Y_1 \text{SIZE}_{it} + Y_2 \text{FREQ}_{it} + Y_3 \text{EXPERT}_{it} + Y_4 \text{GEN}_{it} + Y_5 \text{INDEP}_{it} + Y_6 \text{FSIZE}_{it} + Y_7 \text{IND}_{it} + \delta_{it} \]

3.8 Chapter Summary

The chapter presented the methodology adopted for the study. It outlined the research paradigm that underpinned the study, the research approach adopted as well as the research design employed in analyzing the results of the study. In addition, the chapter presented the population for the study and the sample selection criteria employed in selecting the sample of firms used for the analysis. Also, the sources of data and methods used in extracting data from the annual reports of firms as well as the techniques for developing risk disclosure indexes were discussed in the chapter. Moreover, the chapter contained a description of the variables used for the analysis and how they were measured. Finally, the chapter ended by discussing the model specification and methodological issues relating to the regression models.
CHAPTER FOUR
DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Introduction
The chapter presents the analysis of results and discussion of findings. The results are discussed in relation to findings of prior studies to ascertain whether they corroborate or contradict what has been found by previous researchers in the research area.

4.2 Quantity of Risk Disclosure by Listed Firms
The average disclosure scores for the quantity of risk disclosure by each of the sampled listed firms for the period 2003 - 2015 were presented in Figure 4.1.

Figure 4.1. Quantity of Risk Disclosure by Listed Firms

Source: Study Results (2017)
The results as presented in Figure 4.1 show an overall average quantity of risk disclosure score of 29.1% for all the sampled listed firms for the period 2003 - 2015. Moreover, Tullow Oil recorded the highest quantity of risk disclosure score of 57.7% for the period under review. In contrast, GCB Bank was found to be the lowest risk disclosing firm over the period as indicated by the lowest quantity of risk disclosure score of 18.5%.

The results of the highest risk disclosing firms and lowest risk disclosing firms were presented in Figure 4.2 as follows:

**Figure 4.2. Highest and Lowest Risk Disclosing Firms in terms of Quantity of Risk**

![Bar chart showing risk disclosure scores for various firms](image)

**Source: Study Results (2017)**

The results in Figure 4.2 project Tullow Oil as the highest risk disclosing firm with an average risk disclosure score of 57.7%. Apart from Tullow Oil emerging as the highest risk disclosing firm, firms such as Guinness Breweries, AngloGold Ashanti Limited, Golden Star Resources,
and Benso Oil recorded relatively high disclosure scores of 50.3%, 46.5%, 42.3%, and 42.0% respectively.

With regards to the lowest risk disclosing firms, GCB Bank appeared to have the lowest average risk disclosure score of 18.5%. This was followed by Trust Bank, HFC Bank, Golden Web, and Societe General with average risk disclosure scores of 18.5%, 19.8%, 20.8%, and 21.1% respectively. All the five lowest risk disclosing firms were from the finance/insurance industry.

4.3 Quality of Risk Disclosure by Listed Firms

The results of the quality of risk disclosure scores by sampled listed firms were presented in Figure 4.3 as follows:

Figure 4.3. Quality of Risk Information Disclosed by Listed Firms

Source: Study Results (2017)
As shown in Figure 4.3, the results show an overall average risk disclosure quality index of 54.0% for all sampled listed firms for the period 2003 - 2015. This value is higher than the overall disclosure index for quantity of risk disclosed by listed firms (29.1%). This implies that though listed firms may appear to be disclosing limited volume of risk information as suggested by the average index of 29.1%, the quality of such information is high. While CAL Bank emerged as the firm with the highest average risk disclosure quality score of 71.9%, PZ Cussons had the lowest average score of 39.2%.

The results of firms with highest and lowest risk disclosure index for quality of risk disclosure were presented in Figure 4.4 as follows:

**Figure 4.4. Highest and Lowest Risk Disclosing Firms in terms of Quality of Risk**

![Figure 4.4. Highest and Lowest Risk Disclosing Firms in terms of Quality of Risk](image)

*Source: Study Results (2017)*

It can be observed from Figure 4.4 that CAL Bank had the highest average risk disclosure quality score of 71.9% followed by GCB Bank, EcoBank, HFC Bank, and Tullow Oil with average risk
disclosure quality scores of 69.6%, 67.4%, 67.1%, and 64.5% respectively. The results showed that all the five firms but one (Tullow Oil) which were deemed to disclose the highest quality of risk information were financial firms. On the contrary, PZ Cussons recorded the lowest average risk disclosure quality score of 39.2%. This was followed by GOIL, Unilever Ghana Limited, Mechanical Lloyd, and Benso Oil with average risk disclosure quality scores of 40.3%, 40.9%, 43.4%, and 43.5% respectively. The results suggest that while financial firms disclose more quality risk information, manufacturing firms appear to disclose low-quality risk information in their annual reports.

4.4 Trends in Quantity of Risk Disclosure

The results in Figure 4.5 showed the trend of the quantity of risk disclosure by listed firms over the period 2003 - 2015.

**Figure 4.5. Trends in Quantity of Risk Disclosure**

![Graph showing trends in quantity of risk disclosure]

**Source: Study Results (2017)**
An analysis of the extent of risk disclosure over the period 2003 - 2015 show an average quantity of risk disclosure score below 30.0%. However, the trend of disclosure for the period show a steady improvement but with some fluctuations along the line. Starting at the lowest average score of 20.2% in 2003, there was a significant improvement in 2006 with an average disclosure score of 25.9%. From 2007 to 2015, the quantity of risk disclosure was quite stable with marginal increases and slight falls over the period. The average index for the period 2007 - 2015 was a little over 30.0%, ending the period at 30.3%. The trend of risk disclosure from 2010 showed a steady year to year increase in the average disclosure score over the period 2010 - 2014. The highest disclosure score for the period was recorded in 2014 with a yearly average score of 34.4%. Though from 2007 onwards the amount of risk disclosure has not been stable with the trend showing some fluctuations, the period witnessed an improvement in risk disclosure. The rise in the disclosure scores from 2007 could be attributed to Ghana’s adoption of the IFRS in 2007.

It must be emphasized that the quantity of risk disclosure for the entire period was low considering the fact that the overall average disclosure score of 29.1% was below the average disclosure score of 78.0% for UK firms reported by Linsley and Shrives (2006). Also, considering other risk disclosure studies which recorded relatively high disclosure scores such as 75.08% by Beretta and Bozzolan (2004), 93.50% by Rajab and Handley-Schachler (2009) and 64.58% by Greco (2010), an average quantity of risk disclosure index of 29.1% was deemed to be low. This implies that despite the adoption of IFRS in 2007 and the increasing demand from stakeholders for more risk disclosures, there has not been a major improvement in risk reporting by listed firms in Ghana over the last decade. Again, the low disclosure score may be attributed to the overconcentration on the disclosure of financial risk while giving low or no attention to the
disclosure of other categories of risk such as strategic risk, operational risk, and compliance and integrity risk.

4.5 Trends in Quality of Risk Disclosure

The results in Figure 4.5 showed the trend in the quality of risk disclosure by listed firms over the period 2003 - 2015.

Figure 4.6. Trends in Quality of Risk Disclosure

![Graph showing trends in quality of risk disclosure]

Source: Study Results (2017)

It can be observed from Figure 4.6 that the overall average risk disclosure quality index of 54.0% for the period 2003 - 2015 is quite encouraging. The trend in risk disclosure quality for the period shows a steady improvement but with some slight falls along the line. The period witnessed the lowest average risk disclosure quality score of 48.9% in 2003 and the highest average risk disclosure quality score of 60.1% in 2014. Starting from the lowest average score of
48.9% in 2003, the period saw a steady improvement in the quality of risk disclosure attaining a maximum score of 57.4% in 2006. There was a drop in the average disclosure score from 57.4% in 2006 to 53.9% in 2007. The trend for the period 2007 - 2012 showed fluctuations in the quality of risk disclosure. Thus, the period witnessed marginal increases and falls in the quality of risk disclosure ending with the lowest average score of 53.2% in 2012. Again, there was a significant increase in the quality score in the years 2013 and 2014 with the average scores of 57.5% and 60.1% respectively.

4.6 Quantity of Risk Disclosure based on Risk Categories

The study sought to investigate the quantity of risk disclosures with regards to the four major categories of risk which served as the focus of the study. The results were presented in Figure 4.7 as follows:

**Figure 4.7. Quantity of Risk Disclosure according to Risk Categories**

![Bar graph showing the quantity of risk disclosure according to risk categories: Financial 87.0%, Strategic 22.9%, Operational 15.2%, Compliance 23.5%.]

**Source: Study Results (2017)**
From Figure 4.7, financial risk appeared to be the most disclosed category of risk with an overall average risk disclosure score of 87.0%, followed by compliance and integrity risk with an average disclosure score of 23.5%. The category of risk with the lowest average disclosure score was operational risk recording an average disclosure score of 15.2%. In comparison with other categories of risk, it can be deduced that listed firms in Ghana make more disclosures on financial risk than other categories of risk. This development may be attributed to fact that listed firms are required to comply with IFRS 7 which makes provision for the disclosure of risks associated with financial instruments. Also, it was revealed that the most disclosed nonfinancial risk was compliance and integrity risk with the disclosure of other categories of risk being very low and irregular.

The results corroborate the findings of Beretta and Bozzolan (2004) that firms in Italy disclose more information on financial risk than nonfinancial risk. Also, the findings are consistent with that of Lajili and Zeghal (2005) who reported that Canadian firms disclose large volumes of information on financial risk than nonfinancial risk. However, the results contradict the findings of Linsley and Shrives (2006) who revealed that UK firms disclose more information on nonfinancial risks such as operational risk and strategic risk than financial risk. Again, the findings are inconsistent with that of Konishi and Ali (2007); Greco (2010) who found that firms in Japan and Italy respectively disclose more nonfinancial risk information than financial risk information in their annual reports.

4.7 Quality of Risk Disclosure based on Quality Parameters

With an overall average risk disclosure quality score of 54.0% for the period 2003 - 2015, the quality of risk disclosure by listed firms in Ghana may be deemed quite encouraging. Figure 4.8
showed the distribution of the quality of risk disclosure according to four quality parameters used for the content analysis.

**Figure 4.8: Quality of Risk Disclosure by Quality Parameters**

![Bar chart showing quality parameters]

**Source: Study Results (2017)**

The quality parameter with the highest average risk disclosure quality index for the period 2003 - 2015 was “understandability” with an average score of 65.6% whereas the least quality parameter was “relevance” with an average score of 41.9%. The results corroborate the findings of Hassan (2014) who reported that risk information disclosed in annual reports of firms in Egypt was easy to understand by readers though such information was less comparable and verifiable. Moreover, it was revealed that out of the seven quality variables that were used to measure “understandability” of risk information, “definition of risk management strategies and techniques used by firm in managing its various risk” as well as “definition of specific risks facing the firm” were the highest reported quality variables of the “understandability” parameter with an average
score of 100% each. On the other hand, the least disclosed “understandability” variable was “disclosure of risk information in the context of the firm’s strategy, business model, and past performance”. The “comparability” parameter for measuring the quality of risk disclosure contained six quality variables with the highest disclosed variable being “the extent of consistency in the presentation of risk information from time to time” with an average quality score of 100%. However, the least disclosed variable was “disclosure of changes in risk treatment compared to the previous period” with an average score of 15.9%.

Also, out of the five variables used to measure the relevance of risk information disclosed, it was found that the most “relevant” parameter variable present in the risk information of firms was “information on how the firms managed their risks”. Thus, information on risk management was deemed very relevant and was mostly disclosed by firms as indicated by the highest average score of 100% in the relevance category. On the other hand, the least disclosed “relevant” parameter variable was “disclosure of information on the impact of the firm’s current activities on its opportunities and threats”. This variable had the lowest average disclosure score of 2.2%.

In terms of the verifiability of risk information provided in annual reports, it was revealed that most of the risk information contain quantitative information as shown by the highest score of 100% for this “verifiability” parameter. However, no information was found with regards to “limitations of the measuring techniques used to assess the risks information” reported in the annual reports.

4.8 Risk Disclosure by Financial and Non-Financial Firms

Studies have shown that financial firms tend to concentrate more on financial risks while manufacturing and other nonfinancial firms report on broad categories of risk including financial
and nonfinancial risks. Therefore, the study found it necessary to investigate the volume of risk disclosure across financial firms and nonfinancial firms. The results of the study with regards to the quantity of risk disclosure by listed firms across financial and nonfinancial firms were presented in Figure 4.9 as follows:

**Figure 4.9. Risk Disclosure for Financial and Non-Financial Firms**

![Risk Disclosure Graph](source)

**Source: Study Results (2017)**

As shown in Figure 4.9, it can be inferred from the results that on average nonfinancial firms disclose more risk information on all the four major categories of risk than financial firms. The overall average disclosure scores for the two major industries show that nonfinancial firms disclose an average of 33.9% of risk information in their annual reports whereas financial firms disclose an average of 21.6% of risk information. The results confirm the assertion of Linsley and Shrives (2006) that since financial firms are more or less risk management entities operating in a highly regulated industry, the type of risks reported by such firms may be significantly
different from those reported by nonfinancial firms. The implies that the quantity and quality of risk disclosure by listed firms differ based on whether a firm belongs to the financial industry or the nonfinancial industry due to differences in industry-specific regulations and risk reporting frameworks.

Though financial firms appear to disclose less risk information relating to other categories of risk other than financial risk, it was revealed that the quality of risk information disclosed by financial firms was very high with an overall average score of 63.5% for the period 2003 - 2015. On the contrary, the quality of risk information disclosed by nonfinancial firms was deemed to be low considering an overall average score of 49.0%. The results suggest that unlike quantity of risk disclosure where nonfinancial firms appear to disclose more risk information than financial firms, in terms of quality of risk disclosure, it was found that financial firms produce high-quality risk information than nonfinancial firms.
4.9 Risk Disclosure by Specific Industries

The results of risk disclosure across the seven industries from which the sampled listed firms were selected from, were presented in Figure 4.10 as follows:

Figure 4.10. Risk Disclosure by Specific Industries

Source: Study Results (2017)

The results show an overall industry average risk disclosure score of 32.1% which implies that on average firms across all industries disclose 32.1% of risk information in their annual reports. With regards to the quantity of risk disclosure by firms in the seven industries, firms in the mining and petroleum industry appear to disclose more risk information on all the categories of risk with an overall average disclosure score of 48.8%. This was followed by the firms in the food and beverage industry with an average disclosure score of 33.6%, and trading and distribution industry with an average score of 32.5%.
Using the overall industry average disclosure score as a benchmark, it can be inferred from Figure 4.10 that three industries comprising the mining and petroleum industry, food and beverage industry, and the trading and distribution industry were the high risk disclosing industries in Ghana. This is based on the fact that they all had average risk disclosure scores above the overall industry average disclosure score of 32.1%. These industries comprised a total of 13 firms within the sampled listed firms suggesting that 43.3% of the sampled listed firms disclose risk information above the overall industry average disclosure score. On the contrary, the printing and publishing, manufacturing, pharmaceuticals, and finance and insurance industries had average disclosure scores below the overall industry average of 32.1%. This suggests that the four industries comprising 17 firms included in the sampled listed firms disclose less risk information in their annual reports. This implies that 56.7% of the sampled listed firms disclose risk information below the overall industry average disclosure score. It can be deduced from the results that the majority of listed firms in Ghana do not disclose adequate risk information in their annual reports.

In terms of the quality of risk disclosure, the results as presented in Figure 4.10 show that on average 51.1% of risk information disclosed by firms in all the industries was of high quality. It emerged that the finance and insurance industry disclosed more quality risk information than the rest of the industries as indicated by the highest quality disclosure score of 63.5% followed by the mining and petroleum industry with an average quality score of 55.8% and the manufacturing industry with an average quality score of 52.3%. It must be noted that 19 of the sampled listed firms belonged to these three industries which indicate that 63.3% of the sampled listed firms disclose high-quality risk information. This is based on the fact that their average quality disclosure scores were above the overall industry average quality score of 51.1%. From the
foregoing, it can be deduced that majority of listed firms in Ghana disclose high-quality risk information though the quantity of risk disclosure, in general appears to be low.

In terms of low quality of risk disclosure, the trading and distribution industry appeared to disclose less quality risk information as indicated by the lowest average quality score of 44.3%. Three other industries - the pharmaceutical, printing and publishing, and the food and beverage industries had their average quality scores below the overall industry average score of 51.1%. This implies that the quality of risk information disclosed by firms in these industries was low. The four industries contain 11 of the sampled listed firms representing 36.7% of the sampled firms. This suggests that 36.7% of the sampled listed firms disclosed less quality risk information using the overall industry average quality score as a benchmark.

4.10 Quantity of Risk Disclosure by Industries according to Major Risk Categories

The study examined the trends in risk disclosure by listed firms across various industries based on the four major categories of risk which the study sought to focus on. The results of this analysis were presented in Figure 4.11 as follows:
The overall industry average disclosure score for the categories of risk are as follows: 87.8% for financial risk, 27.5% for strategic risk, 28.2% for compliance and integrity risk, and 17.2% for operational risk. The results suggest that on average firms within each industry disclose more financial risk information than other categories of risk as indicated by the highest overall industry average score of 87.8%. The least disclosed risk category is operational risk as indicated by the overall industry average disclosure score of 17.2%.
Contrary to the expectation of the researcher, the mining and petroleum industry appeared to disclose more information on financial risk than the finance and insurance industry as indicated by an average disclosure score of 100%. The mining and petroleum industry emerged as the highest disclosing industry for financial risk ahead of the finance and insurance industry because firms in the industry reported on risks associated with all the five risk items in the financial risk category namely interest rate risk, foreign exchange risk, credit risk, liquidity risk, and commodity price risks. On the contrary, the majority of firms within the finance and insurance industry, as well as other nonfinancial industries, disclosed less or no information on commodity price risk. The printing and publishing industry recorded the lowest average score of 80.0% for financial risk disclosure which was found to be below the overall industry average score of 87.8% for financial risk.

Furthermore, the mining and petroleum industry was found to disclose more information on strategic risk with an average disclosure score of 41.1%. The finance and insurance industry disclosed the lowest volume of information on strategic risk as indicated by an average disclosure score of 11.9% below the overall industry average score of 27.5%. Again, it was found that firms within the mining and petroleum industry tend to disclose more information on compliance and integrity risk as indicated by an average score of 52.3%. On the other hand, firms within the pharmaceutical industry disclosed the least information on compliance and integrity risk across all the industries as indicated by the lowest average score of 11.9%. In addition, firms within the mining and petroleum industry were found to disclose more information on operational risk as shown by the highest industry average score of 32.9% while firms within the finance and insurance industry had the lowest average disclosure score of 11.1% in terms of this risk category.
4.11 Descriptive Statistics

The summary descriptive statistics of quantity and quality of risk disclosure and audit committee characteristics of the sampled listed firms were presented in Table 4.1 as follows.

Table 4.1. Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDIQuantity</td>
<td>0.2912</td>
<td>0.1132</td>
<td>0.1142857</td>
<td>0.6571</td>
</tr>
<tr>
<td>RDIQuality</td>
<td>0.5398</td>
<td>0.1069</td>
<td>0.3182</td>
<td>0.7273</td>
</tr>
<tr>
<td>Size of audit committee</td>
<td>3.7619</td>
<td>1.1303</td>
<td>2.0000</td>
<td>7.0000</td>
</tr>
<tr>
<td>Frequency of meetings</td>
<td>3.9556</td>
<td>0.8127</td>
<td>3.0000</td>
<td>6</td>
</tr>
<tr>
<td>Expertise</td>
<td>0.6791</td>
<td>0.3068</td>
<td>0.2000</td>
<td>1.0000</td>
</tr>
<tr>
<td>Gender</td>
<td>0.2019</td>
<td>0.3098</td>
<td>0</td>
<td>1.0000</td>
</tr>
<tr>
<td>Independence</td>
<td>0.9058</td>
<td>0.1954</td>
<td>0.3333</td>
<td>1.0000</td>
</tr>
<tr>
<td>Size of firm</td>
<td>7.9495</td>
<td>1.2424</td>
<td>4.2500</td>
<td>10.6300</td>
</tr>
<tr>
<td>Industry</td>
<td>0.6317</td>
<td>0.6317</td>
<td>0</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Source: Study Results (2017)

The summary descriptive statistics of the dependent and independent variables as well as the control variables used in the regression models were presented in Table 4.1. The results show that the least quantity of risk disclosure by a listed for the period under review was 11.3% with the maximum risk disclosure score being 65.7%. Also, the quality of risk information disclosed by listed firms ranged from a minimum of 31.8% to a maximum of 72.4%. On average, listed firms disclosed 29.1% (mean = 0.2912) of risk information with the quality of such risk information at 54.0% (mean = 0.5398). Though the average score for quantity of risk disclosure appear to show some improvement considering the average score of 24.28% reported by
Appiagyei et al., (2016) for the period 2004 - 2011, it is still deemed to be low when compared with an average score of 78.0% reported by Linsley and Shrives (2006) and 93.50% by Rajab and Schachler (2009) for UK firms, as well as 75.08% by Beretta and Bozzolan (2004), and 64.58% by Greco (2010) for Italian firms. However, the overall average disclosure score for quality of risk disclosure appears to be high when compared to the average disclosure quality score of 36.0% by listed firms in Egypt as reported by Hassan (2014).

The low quantity of risk disclosure may be attributed to the overconcentration of firms on financial risk to meet the requirements of IFRS 7 at the expense of other categories of risk such as strategic risk, operational risk, and compliance and integrity risk. Also, this can partly be attributed to the lack of regulatory requirements for listed firms in Ghana for the disclosure of nonfinancial risk information.

In analyzing the audit committee characteristics, the study found that on average audit committees are composed of four members with a minimum and maximum membership of two and seven respectively. This suggests that majority of listed firms in Ghana have four or more members composing their audit committees in line with the recommendations of FRC (2012). Consistent with the recommendations of PwC (1993) and KPMG (1999), the results show that on average audit committees of listed firms meet four or more times within a year with the minimum number of meetings being three and the maximum being six times.

Furthermore, it was revealed that on average, audit committees of listed firms have 67.9% of their members having some level of financial expertise as recommended by the SEC and SOX as well as FRC (2012) of UK. With regards to gender diversity, it was found that on average, audit committees had 20.2% female representation with some committees having no female
representation at all. In addition, the results show that on average 90.6% of the membership of audit committees were independent non-executive directors. This is consistent with the recommendations of SOX and FRC (2012) that to ensure the independence and effectiveness of audit committees, they should be composed mainly of independent non-executive directors who cannot be easily influenced by management. With regards to the control variables, the results suggest that on average, 63.2% of the sampled firms were nonfinancial firms. The mean size of the sampled firms was 7.9 with a minimum and maximum size of 4.3 and 10.6 respectively.

4.12 Correlation Analysis

The results of the correlation analysis of dependent and the independent variables were presented in Table 4.2 as follows:

**Table 4.2. Correlation Matrix**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Quantity</th>
<th>Quality</th>
<th>Size</th>
<th>Freq</th>
<th>Expert</th>
<th>Gen</th>
<th>Indep</th>
<th>Fsize</th>
<th>Ind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality</td>
<td>-0.299</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>0.998*</td>
<td>0.094*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freq</td>
<td>0.036</td>
<td>0.400***</td>
<td>0.120**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expert</td>
<td>0.005</td>
<td>0.083</td>
<td>-0.246***</td>
<td>-0.024</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gen</td>
<td>-0.094*</td>
<td>0.0450</td>
<td>-0.108**</td>
<td>-0.205***</td>
<td>0.285***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indep</td>
<td>-0.285***</td>
<td>0.238***</td>
<td>0.042</td>
<td>0.115**</td>
<td>0.275***</td>
<td>0.239***</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fsize</td>
<td>0.086</td>
<td>0.245***</td>
<td>0.296***</td>
<td>0.476***</td>
<td>-0.138**</td>
<td>0.129**</td>
<td>0.152***</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ind</td>
<td>0.516***</td>
<td>-0.688***</td>
<td>0.055</td>
<td>-0.374***</td>
<td>0.011</td>
<td>-0.175</td>
<td>-0.369</td>
<td>-0.360</td>
<td>1</td>
</tr>
</tbody>
</table>

***significant at 0.01 level (1%), **significant at 0.05 level (5%), *significant at 0.1 level (10%)

**Source: Study Results (2017)**
The correlation coefficients of dependent and independent variables as presented in Table 4.2 show a positive relationship between quantity of risk disclosure and the independent variables with the exception of gender diversity and independence of audit committees showing low negative correlations. Also, the quality of risk disclosure is positively correlated with all the independent variables with the exception of one control variable (industry type) showing a high negative correlation. As expected, size of audit committee showed a high positive correlation with quantity of risk disclosure. This implies that the larger the size of audit committee the higher the level of risk disclosure. Moreover, the correlations between the independent variables were found to be low with positive and negative coefficients all below 0.3. This suggests that there was no case of multicollinearity between the independent variables.

4.13 Regression Results for Quantity of Risk Disclosure

The regression results to establish the relationship between quantity of risk disclosure and audit committee characteristics as estimated by Model 1 were presented in Table 4.3 as follows:
Table 4.3. Random Effects Regression Results for Quantity of Risk Disclosure

| Variable     | Coef.    | Std. Err. | Z     | P>|z|  | VIF  |
|--------------|----------|-----------|-------|------|------|
| Size         | 0.00892  | 0.00659   | 1.35  | 0.176| 1.22 |
| Frequency    | -0.00055 | 0.00904   | -0.06 | 0.952| 1.62 |
| Expertise    | 0.46439**| 0.02293   | 2.02  | 0.0403| 1.30 |
| Gender       | -0.00165 | 0.02811   | -0.06 | 0.953| 1.36 |
| Independence | 0.09733* | 0.05754   | -1.69 | 0.091| 1.32 |
| Firm size    | 0.04905***| 0.00866  | 5.66  | 0.000| 1.64 |
| Industry     | 0.15161***| 0.03067  | 4.94  | 0.000| 1.50 |
| Constant     | -0.16400*| 0.09713   | -1.69 | 0.091|      |

R-square

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Within</td>
<td>0.1618</td>
</tr>
<tr>
<td>Between</td>
<td>0.4715</td>
</tr>
<tr>
<td>Overall</td>
<td>0.3408</td>
</tr>
</tbody>
</table>

Wald chi2 (7) 69.19 Prob > chi2 0.0000
Observations 315

***significant at 0.01 level (1%), **significant at 0.05 level (5%), *significant at 0.1 level (10%)

Source: Study Results (2017)

The regression results as presented in Table 4.3 show an R-square value of 0.3408 which implied that 34.08% of the variation in the quantity of risk disclosure by listed firms can be explained by the independent variables in the regression model. The results show no significant relationship between size of audit committee and quantity of risk disclosure. This means that large size of audit committee does not necessarily influence the volume of risk disclosure by a firm. Hence, the hypothesis that there is a relationship between size of audit committee and the level of risk disclosure is rejected. This is consistent with the findings of Muzahem (2011); Mangena and Pike (2005) who found no significant relationship between size of audit committee
and voluntary disclosure and Othman et al. (2014) who found no significant relationship between size of audit committee on voluntary ethics disclosure.

However, the finding contradicts prior studies by Abraham and Cox (2007); Neri (2010); Madi et al. (2014); Viljoen et al., (2016) who found a significant positive relationship between audit committee size and voluntary disclosure. Also, the finding is inconsistent with that of Appuhami and Tashakor (2017) who found a significant positive relationship between size of audit committee and the volume of CSR disclosure. Moreover, the finding appears to be inconsistent with the resource dependency theory that suggests that large audit committees should have the ability to commit greater resources and authority to effectively perform their responsibilities towards enhancing financial reporting (Allegrini & Greco, 2011; Bedard & Gendron, 2010). The results may be attributed to the situation where large audit committees lead to delays in decision making due to numerous diverse opinions from a large number of members on simple matters.

There was no significant relationship between the frequency of meeting of audit committees and the quantity of risk disclosure. Thus, the finding rejected that hypothesis that frequency of meetings of audit committee influence the volume of risk disclosure. This implies that audit committee activities in terms of meetings do not necessarily enhance its monitoring role towards greater risk disclosure. However, this is inconsistent with the recommendation of FRC (2012) that members of audit committees should meet regularly within a year to allow them ample time to thoroughly deal with the issues entrusted to them by the board of directors. Also, the finding contradicts previous studies which reported a strong relationship between frequency of audit committee meetings and financial disclosures (Pucheta-Martínez & De Fuentes, 2007), CSR disclosure (Appuhami & Tashakor, 2017; Karamanou & Vafea, 2005), voluntary disclosures
Greco (2011) and intellectual capital disclosure (Li et al., 2012). This may be due to the fact that audit committee tends to focus more attention on other financial reporting and internal control issues at the expense of risk disclosures during their meetings. This is possible considering the fact that while financial disclosures are clearly defined and guided by IFRS, risk disclosure is voluntary and mostly left to the discretion of members.

The result showed a positive relationship between financial expertise of audit committee and quantity of risk disclosure. This relationship was also found to be significant therefore supporting the hypothesis that financial expertise of audit committee influences the level of risk disclosure. This is consistent with the provisions of SOX and FRC (2012) which recommended that for an audit committee to be very effective in carrying out its oversight role of enhancing financial reporting quality, it should have at least one of its members having some level of financial expertise. The finding contradicts that of Appuhami and Tashakor (2017); Madi et al. (2014); and Othman et al. (2014) who found no significant relationship between financial expertise of audit committees and CSR disclosure, corporate voluntary disclosure, and voluntary ethics disclosure respectively. However, it provides evidence to support previous findings which reported positive relationship between financial expertise and voluntary disclosure (Akhtaruddin & Haron, 2010), environmental disclosure (Chapple et al., 2012).

The finding may be attributed to the fact that issues relating to risk disclosure require persons with sound knowledge and expertise in accounting and finance who are capable of effectively identifying and evaluating risk information in order to make appropriate recommendations towards enhancing risk reporting. Also, it may well be that unlike members without financial expertise who may overlook some financial reporting violations without knowing the
consequences of such actions, financial experts on the committee are expected to carefully scrutinize the financial reporting and risk disclosure framework of the firm being mindful of the capital market implications of quality financial reporting and risk disclosures.

The relationship between gender diversity of audit committee and quantity of risk disclosure was found to be statistically insignificant. This implies that quantity of risk disclosure does not necessarily improve with a large number of female representation on the committee. This may well mean that large female representation tends to stifle the effectiveness of the committee thereby negatively affecting the quantity of risk disclosure. Hence, the fourth hypothesis is rejected. This refutes the argument that gender diversity brings on board important human resource and varied opinions that help to improve the work of audit committees as posited by Appuhami and Tashakor (2017). Also, the finding is inconsistent with the assertion of Bernardi et al. (2002) that gender diversity is a very important human characteristic that improves the effectiveness of teams and enhances the decisions of audit committees due to the diversity of opinions from male and female members.

However, the finding supports the position of Smith et al., (2006) who found no significant relationship between gender diversity of audit committee and voluntary disclosure. The negative result of gender diversity may be due to the sensitive and more cautious nature of women when making decisions. This attitude may tend to delay the work of the committee since audit committees with more female representation may be affected by the somewhat slow and overly cautious decision-making process of its female members.

It is interesting to note that the relationship between independent non-executive directors and the quantity of risk disclosure was not only positive but statistically significant. This
demonstrates the fact that audit committees composed mainly of independent non-executive directors were likely to have a strong influence on the quantity of risk disclosure by demanding more risk disclosures. Hence, the fifth hypothesis is accepted and consistent with the agency theory that independent non-executive directors tend to seek the welfare of stakeholders of the firm and therefore will demand more risk disclosures since they cannot be easily influenced by management. The finding supports that of Akhtaruddin and Haron (2010); Mangena and Tauringana (2007); Patelli and Prencipe (2007) who found that independence of audit committee is positively associated with improved voluntary disclosure.

The finding suggests that when members of an audit committee are fully independent of management, they tend to work independently and objectively devoid of any managerial influences. Also, independent non-executive directors of an audit committee are in a better position to effectively monitor and scrutinize management’s financial reporting practices and corporate decisions without any fear or favour. This helps in enhancing the credibility and transparency of financial and nonfinancial disclosures with the aim of reducing information asymmetry.

With regards to the control variables, the results show that firm size was positively related to quantity of risk disclosure with this relationship being statistically significant. This implies that large firms disclose more risk information to meet the demands of their numerous stakeholders. Thus, the finding is consistent with the stakeholder theory that suggests that firms disclose more information on both their financial and nonfinancial activities in order to satisfy the information needs of their stakeholders. Also, the finding supports the position of Beattie et al. (2004); Mohobbot (2005); Deumes and Knechel (2008) who found a positive relationship between firm
size and the level of risk disclosure. Concurring with Hassan (2014), the positive relationship between firm size and quantity of risk disclosure can be attributed to the fact that large firms have the financial muscle to spend more on information production and distribution as compared to smaller firms. Also, in order to mitigate challenges associated with information asymmetry and agency costs, large firms tend to disclose more risk information to their stakeholders.

Similarly, the type of industry within which a firm operates was found to have a positive relationship with quantity of risk disclosure in line with the assertion of Hassan (2009) that firms in different industries are exposed to some risks that are peculiar to the industry. This is consistent with the findings of Amran et al. (2008); Lim et al., (2007) who reported a significant relationship between the nature of the industry and the volume of risk disclosure. Also, the relationship was not only positive but statistically significant implying that nonfinancial firms tend to disclose more risk information than financial firms due to the nature of their activities and the fact that they may be exposed to various categories of risk due to the nature of their operations.

For instance, by the nature of their activities, mining and manufacturing firms are exposed to operational and environmental risks which financial firms may not be exposed to. Apart from the general listing requirements of the GSE, nonfinancial firms such as pharmaceutical, mining and petroleum, and other manufacturing firms are required to meet some environmental regulations of the Environmental Protection Agency (EPA) and report on the effect of their activities on the environment. Moreover, the low level of risk disclosure by financial firms as compared to nonfinancial firms may be due to the strict industry regulations and unique disclosure requirements by financial firms which tend to focus more on financial risk than nonfinancial risk.
4.14 Regression Results for Quality of Risk Disclosure

The regression results for the relationship between quality of risk disclosure and audit committee characteristics as estimated by the Model 2 were presented in Table 4.4 as follows:

Table 4.4: Random Effects Regression Results for Quality of Risk Disclosure

| Variable     | Coef.   | Std. Err. | Z     | P>||z| | VIF |
|--------------|---------|-----------|-------|------|-----|
| Size         | 0.01006** | 0.00465   | 2.17  | 0.030 | 1.22 |
| Frequency    | -0.00334  | 0.00626   | -0.53 | 0.594 | 1.62 |
| Expertise    | 0.03485** | 0.01588   | 2.19  | 0.028 | 1.30 |
| Gender       | -0.05991*** | 0.20150   | -2.97 | 0.003 | 1.36 |
| Independence | -0.00928  | 0.47724   | -0.19 | 0.846 | 1.32 |
| Firm size    | 0.01884*** | 0.00658   | 2.73  | 0.004 | 1.64 |
| Industry     | -0.14299*** | 0.02725   | -5.25 | 0.000 | 1.50 |
| Constant     | 0.45421*  | 0.07810   | 5.82  | 0.091 | |

R-square

<table>
<thead>
<tr>
<th>Within</th>
<th>0.0808</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>0.5493</td>
</tr>
<tr>
<td>Overall</td>
<td>0.4617</td>
</tr>
</tbody>
</table>

Wald chi2 (7) | 58.54 | Prob > chi2 | 0.0000 |
Observations  | 315     |

***significant at 0.01 level (1%), **significant at 0.05 level (5%), *significant at 0.1 level (10%)

Source: Study Results (2017)

The regression results as presented in Table 4.9 show an R-square value of 0.4617 which implies that 46.4% of the variation in quality of risk disclosure is explained by the independent variables in the regression model. Moreover, the results show a positive association between size of audit committee and quality of risk disclosure. Also, this relationship was found to be statistically
significant implying that size of audit committee strongly influences the quality of risk disclosure. Hence, the hypothesis was accepted consistent with the proposition of the legitimacy theory that suggests that large board size and by extension large audit committees provide the avenue for members who are interested in risk disclosures to demand more improvement in the quality and quantity of risk disclosure. Moreover, the result is consistent with prior findings of Dhaliwal et al. (2010) which suggest that size of audit committee significantly influences the quality of financial reporting.

The positive association between size of audit committee and quality of risk disclosure may be explained from the premise that large size audit committees bring diversity of skills, expertise and opinions to the work of the committee which enhances its effectiveness and the quality of discussions and decisions. Also, the large size of audit committees affords members the laxity and time to delve deep into issues of risk disclosure and effectively scrutinize and evaluate the quality of the risk disclosures since the workload will be divided among a relatively large number of members.

The relationship between frequency of audit committee meetings and quality of risk disclosure was found to be statistically insignificant. This contradicts the recommendation of FRC (2012) that suggest that regular meetings of audit committees allow them ample time to thoroughly deal with the issues entrusted to them by the board of directors. Also, the result is inconsistent with that of Appuhami and Tashakor (2017) who reported a positive and significant relationship between audit committee meetings and the quality of CSR disclosure. The finding suggest that more audit committee meetings tend to affect the quality of risk disclosure more especially when
these meetings tend to focus more on financial disclosures at the expense of the quality of risk disclosure.

Furthermore, the results show a positive relationship between financial expertise of audit committee and quality of risk disclosure. This implies that quality of risk disclosure significantly improves when majority of audit committee members have financial expertise. The result is consistent with that of Akhtaruddin and Haron (2010); Madi et al. (2014) who found a positive relationship between financial expertise of audit committee members and quality of risk disclosure. It is believed that with their in-depth knowledge in finance/accounting, members with financial expertise can elevate the standard of discussion and evaluation of risk information being mindful of the capital market implications. Hence, the finding could be attributed to financial experts’ commitment to quality financial reporting and risk disclosure which guides their corporate decisions. Also, audit committees with more financial expertise can thoroughly analyze annual reports of the firm and provide differing but complementary viewpoints on risk disclosures which helps to enhance the quality of such disclosures.

With regards to gender diversity, the results show a negative but significant relationship between the number of females on audit committee and the quality of risk disclosure. This may suggest that the presence of females on audit committees does not necessarily improve the quality of risk disclosure but may as well affect the quality of risk disclosure. This implies that in constituting the membership of audit committees, board of directors should be careful in increasing the number of female representation since a large number of females may tend to negatively affect the quality of disclosure. While it may be argued that gender diversity improves the level of discussion and debate on sensitive and emotional issues which may not gain much
attention form an all-male audit committee (Bernardi et al. (2002), the finding seems to refute this assertion. However, the finding is consistent with previous studies which reported a negative association between gender diversity and quality of risk disclosure (Gallego-Álvarez, et al., 2010); and voluntary disclosure (Smith, et al., 2006).

The number of independent non-executive directors on audit committees show a negative relationship with quality of risk disclosure. However, the relationship was found to be insignificant implying that the number of independent non-executive directors on an audit committee does not necessarily improve quality of risk disclosure. This is however, inconsistent with the agency theory which proposes that independent non-executive directors who are free from the manipulation and influence of management will seek the interest of stakeholders and ensure an improvement in the quality of financial reporting and risk disclosure. The finding corroborates the position of Ismail and Rahman (2011); Haat et al. (2008) who reported that the number of non-executive directors on audit committees do not have any significant influence on the quality of risk disclosure. On the other hand, the finding contradicts that of Lajili and Zeghal (2011) who reported a significant positive relationship between independent non-executive directors and the quality of financial reporting.

In terms of the control variables, while firm size shows a positive association with the quality of risk disclosure, industry type was negatively associated with quality of risk disclosure. However, both relationships were found to be significant. The findings suggest that while large firms may disclose more risk information to reduce information asymmetry and mitigate agency cost, the quality of such disclosures was also deemed to be high. On the contrary, the quality of risk disclosure by nonfinancial firms was found to be low as compared to financial firms. This may
be attributed to the fact that unlike nonfinancial firms, financial firms tend to focus more on financial risks which are clearly defined by IFRS and relevant banking and financial regulations which make their reporting quite straightforward while focusing less on other categories of risk.

4.15 Chapter Summary

The chapter presented the analysis of the results of the study and discussion of the findings. The quantity and quality of risk disclosure by listed firms for the period 2003 – 2015 were presented with the average disclosure scores for quantity of risk disclosure and quality of risk disclosure being 29.1% and 54.0% respectively. It was shown that nonfinancial firms disclose more risk information than financial firms. However, the quality of risk disclosure by financial firms was found to be higher than that of nonfinancial firms. The trend in quantity of risk disclosure for the period show a steady improvement but with some fluctuations along the line. Also, the trend in risk disclosure quality for the period shows a steady improvement but with some slight falls along the line. In terms of quantity of risk disclosure based on risk categories, it was revealed that listed firms in Ghana make more financial risk disclosures than other categories of risk. The chapter presented a correlation matrix that suggested that there was no multicollinearity among the independent variables considering the low VIFs of the variables. Furthermore, the chapter presented the descriptive statistics of the variables and the regression results of the relationship between quantity of risk disclosure and audit committee characteristics as well as the relationship between quality of risk disclosure and audit committee characteristics.
CHAPTER FIVE
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the key findings of the study as well as conclusions and recommendations drawn from the findings. It also presents the implications of the study for research, practice, and policy as well as future research directives. The chapter ends with limitations of the study.

5.2 Summary of Findings

The study examined the effect of audit committee characteristics on risk disclosure by listed firms in Ghana. Using annual reports of 30 listed firms spanning the period 2003 - 2015, content analysis technique was employed to compute disclosure indexes for quantity and quality of risk disclosure. The study adapted risk disclosure checklists by Linsey and Shrives (2006) and Greco (2012) to measure the quantity of risk disclosure and developed the disclosure index using a total of 35 risk disclosure items under four risk categories (financial risk, strategic risk, operational risk, and compliance and integrity risk). On the other hand, the study adopted the four quality parameter framework of Botosan (2004) and Hassan (2014) to evaluate the quality of risk information disclosed in annual reports of firms. Regression analysis was conducted to examine the relationship between audit committee characteristics and risk disclosure.

The results of the content analysis showed an overall average risk disclosure index of 29.1% for the quantity of risk disclosure for the period 2003 – 2015. This figure was deemed to be low when compared to risk disclosure indexes in other jurisdictions such as the UK, Italy and Japan as seen in the literature. The least risk disclosing firm disclosed 11.4% of risk information while
the highest disclosing firm disclosed 65.7% of risk information in their annual reports. The trend in quantity of risk disclosure showed a steady improvement but with some fluctuations. Again, it was revealed that listed firms disclosed more information on financial risk than other categories of risk namely strategic risk, operational risk, and compliance and integrity risk with the least disclosed category of risk being operational risk. The study revealed that on average nonfinancial firms disclose more risk information than financial firms.

Moreover, in terms of individual firms, Tullow Oil Ghana emerged as the highest risk disclosing firm while GCB Bank emerged as the least risk disclosing firm. With regards to quality of risk disclosure, the results show an overall average disclosure index of 54.0% for quality of risk disclosure. The average score for quality of risk disclosure appears to be high when compared to the average quality of disclosure score of 36.0% by listed firms in Egypt as reported by Hassan (2014).

In terms of the relationship between audit committee characteristics and risk disclosure, it was found that large audit committees may not necessarily increase the quantity of risk disclosure but rather enhance the quality of risk disclosure. Thus, large audit committees will influence risk disclosure by demanding more quality risk information. This is due to the fact that large audit committees may have the capacity in terms of numbers and the ability to commit greater resources and authority to effectively scrutinize annual reports of the firm and make relevant recommendations towards enhancing the quality of risk disclosure. Also, large audit committees bring diversity of skills, expertise and opinions to the work of the committee which enhances its effectiveness and the quality of discussions and decisions.
Financial expertise of audit committees appeared to have a strong influence on the quantity and quality of risk disclosure in that firms with more financial experts on their audit committees made more risk disclosures with the quality of such disclosures deemed to be very high. This can be attributed to the fact that financial experts are people deemed to be well versed in financial and accounting matters and know the capital market implications of risk disclosure. Hence, more financial experts on audit committees are likely to influence the quantity and quality of risk disclosure by calling for more improvements in this direction.

Furthermore, the results showed that the presence of more independent non-executive directors on audit committees may not necessarily enhance the quality of risk disclosure but encourage more risk disclosures in terms of the quantity of risk information. This can be attributed to the fact that while some non-executive directors on the audit committee may not have financial expertise to make major contributions towards the quality of risk disclosure, they may however, call for more quantity of risk information to be disclosed with the aim of reducing information asymmetry between management and stakeholders. This is because ordinarily independent non-executive directors on the audit committee seek to pursue the interest of stakeholders and not that of management more so when they cannot be easily manipulated or influenced by management.

However, the results show that frequency of audit committee meetings and gender diversity of audit committees does not necessarily improve the quantity and quality of risk disclosure. For instance, it was found that more female representation on audit committees rather stifles the effectiveness of the committee thereby affecting the quality of risk disclosure. This may be as a result of the fact females are somewhat overly cautious in their decision-making processes and
tend to be slow in making decisions. This attitude of female directors on audit committees affects the effectiveness of the work of the committee.

5.3 Conclusions

The study has shown that despite the increasing demand for more risk disclosures in terms of the quantity of risk information, the volume of risk disclosure by listed firms in Ghana is still low despite improvement in the quality of risk disclosure. The study concluded that an audit committee with the relevant characteristics is an effective corporate governance mechanism that can help to protect the interest of shareholders through the effective monitoring of risk disclosure practices of firms with the aim of reducing information asymmetry and agency cost. Thus, the study emphasizes that even in the absence of mandatory risk disclosure requirements for listed firms in Ghana, audit committees with adequate characteristics could help in improving the volume and quality of risk disclosure by listed firms.

5.4 Recommendations

Despite the call for more risk disclosure by listed firms in recent times, the volume of risk disclosure by firms in Ghana appear to be still low. Therefore, it is recommended that stakeholders should demand more risk disclosures from listed firms by mounting enormous pressure on them to disclose more. More so, firms who fail to disclose more risk information should be punished by investors by labelling such firms as high-risk firms, offering low prices for their stocks, and granting them capital at a higher cost. It is believed that when investors adopt such punitive measures against listed firms, they would be compelled to make more risk disclosures.
It was found that listed firms appear to focus more on the disclosure of financial risk information in order to satisfy the requirement of IFRS 7 while leaving out nonfinancial risk. But the disclosure of nonfinancial risks such as strategic risk, operational risk, environmental risk, integrity risk, compliance risk, etc. is very necessary for providing stakeholders with a holistic view of the firm’s risk profile. Hence, it is recommended that listed firms should disclose more information on their nonfinancial risks as well instead of the over-concentration on the disclosure of financial risk.

Furthermore, the board of directors and management of listed firms must come to terms with the fact that the adoption of IFRS makes their annual reports comparable to financial reports of foreign firms across the globe who adopt IFRS. Hence, in the face of global competition, cross-country listing, and the possibility of attracting foreign investors, it is only appropriate that listed firms in Ghana make more voluntary risk disclosures. This will help in satisfying the risk information needs of investors and other stakeholders who will seek to compare the annual reports of such firms to international best practices in terms of risk disclosures when making their economic buy or sell decisions.

The study revealed that audit committee characteristics such as size, independence of audit committee, and financial expertise of audit committees have a strong influence on not only the quantity of risk disclosure but the quality of risk information disclosed by firms as well. Hence, to ensure the effectiveness of audit committees in enhancing the quality of risk disclosures, it is recommended that the board of directors in constituting the membership of audit committees should take into serious consideration these audit committee characteristics.
5.5 Implications of the Study

The study appears to be the first empirical study that attempts to examine the effect of audit committee characteristics on the quantity and quality of risk disclosure in Ghana, and also one of the few studies in this direction in the risk disclosure literature in general. Hence, the study proves to be very relevant and makes significant contributions to research, practice and policy. The specific implications of the findings of the study are presented in the sections that follow:

5.5.1 Implications to Research

By examining the effect of audit committee characteristics on risk disclosure, the study supports the agency theory which proposes that an audit committee is an effective corporate governance mechanism that influences risk disclosure thereby reducing information asymmetry. Hence, the study contributes to the debate on the effectiveness of audit committees in enhancing the volume and quality of risk disclosure by firms. Secondly, studies on the quality of risk disclosure are very limited in that researchers tend to focus more on the quantity of risk disclosure than the quality of risk disclosure. Hence the study makes a major contribution to enriching the literature on the quality of risk disclosure as well.

5.5.2 Implications for Practice

In terms of practice, the study provides an insight to board of directors on the need to strengthen its audit committee to enhance their monitoring role of improving both quantity and quality of risk disclosure by listed firms. Also, average disclosure scores for quantity and quality of risk disclosure as well as the individual firm disclosure scores can serve as a guide to the board of directors of the sampled listed firms in determining the volume of risk disclosures in annual reports over the period so that they can improve on it where necessary.
5.5.3 Implications for Policy

The study contributes to policy by emphasizing the relevance of audit committees in enhancing risk disclosures by listed firms. Thus, the study provides evidence that an audit committee is a very effective corporate governance mechanism in terms of monitoring and enhancing the risk disclosure practices of firms.

The study has shown that the strength of an audit committee in enhancing quantity and quality of risk disclosure is contingent on its size, financial expertise, and number of independent non-executive directors. Therefore, these characteristics should be highly considered in the appointment of audit committee members by the board of directors since the committee’s effectiveness is contingent on them.

Considering the strong influence of financial expertise of audit committees on risk disclosure, the study provides evidence to support the proposition that membership to audit committees should be based largely on the financial expertise of members of the board. This implies that as part of listing requirements of the GSE, listed firms should be mandated to have more persons with financial expertise on their boards so that such people can be subsequently appointed onto audit committees to enhance the volume and quality of risk disclosure.

Despite the recommendations of the SOX and FRC of the UK as well as guidelines on audit committees released by major accounting firms such as PwC and KPMG on the composition of audit committees in terms of ensuring its independence from management, membership of some audit committees of listed firms in Ghana was found to include executive directors. However, the study has proven that independent non-executive directors are very effective in ensuring more
risk disclosures. Therefore, the study provides evidence to support the call for audit committees to be composed mainly of independent non-executive directors.

Moreover, the study provided evidence that financial firms disclose more information on financial risks than nonfinancial risks due to the fact that banking and financial regulations guiding their operations emphasize the disclosure of financial risk. This calls for more stringent listing regulations that will compel financial firms to disclose more information on nonfinancial risks as well.

5.6 Limitations of the Study

The major limitation of the study was the unavailability of annual reports for non-listed firms and some of the listed firms in Ghana thereby limiting the sample size. Using a sample of 30 listed firms somewhat limited the generalization of the results of the study to all listed firms in Ghana. This is because using large samples in quantitative studies helps in enhancing the prediction power of the regression model thereby making it easy for generalization of the findings to the entire population. Also, due to the unavailability or difficulty in obtaining annual reports of non-listed firms, the study focused on only listed firms. This suggests that the results cannot be interpreted within the context of all firms in Ghana but only in the context of listed firms.

In addition, due to the subjective nature of the content analysis technique, the definition of what constitute a risk item, the categorization of risk factors into the four major categories of risk employed by the study as well as the determination of the extent to which a particular risk information may be deemed to be of high quality may be influenced by the subjective views of
the researcher. However, the effect of the researcher’s subjective biases was reduced by the adoption of a widely accepted disclosure checklists and coding decision rules.

5.7 Suggestions for Further Research

Based on the findings and limitations of the study, the following suggestions were made to guide future researchers who intend to conduct a study in this area:

Future studies on risk disclosure in Ghana should use a large sample size made up of both listed and non-listed firms. This will help in not only generalizing the findings but comparing the disclosure practices of listed and non-listed firms in order to establish which category of firms disclose more risk information.

The study was confined to listed firms in Ghana thereby limiting the generalization of the findings to other developing countries. Therefore, in order to extend the findings of the study to other developing countries, future studies should consider a wide sample of firms from more developing countries in order to appreciate the extent of risk disclosure and the quality of risk disclosure by firms in developing countries.

In examining the influence of audit committee characteristics on risk disclosure, the study relied on five characteristics: gender, size of audit committee, frequency of meetings, independence of members, and financial expertise of members. It is recommended that future studies should increase the number of audit committee characteristics by considering other characteristics such as tenure of members, multiple directorships, and nationality of directors.

The study adopted risk disclosure checklists of prior researchers in different geographical, political and cultural jurisdictions. However, considering the voluntary nature of risk disclosure,
it is believed that disclosure checklists developed in other countries may be influenced by the
country-specific disclosure requirements and regulations of such countries which may be
different from the Ghanaian setting. Therefore, it is recommended that future risk disclosure
studies in Ghana should consider using a disclosure checklist developed based on the Ghanaian
context in order to reflect the nature and kinds of risk peculiar to Ghanaian firms.
REFERENCES


## APPENDIX 1: List of Sampled Firms according to Industry

<table>
<thead>
<tr>
<th>Name of Firm</th>
<th>Symbol</th>
<th>Industry</th>
<th>Included in Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access Bank Ghana</td>
<td>ABG</td>
<td>Finance and Insurance</td>
<td>No</td>
</tr>
<tr>
<td>Agricultural Development Bank</td>
<td>ADB</td>
<td>Finance and Insurance</td>
<td>No</td>
</tr>
<tr>
<td>CAL Bank Limited</td>
<td>CAL</td>
<td>Finance and Insurance</td>
<td>Yes</td>
</tr>
<tr>
<td>Enterprise Group Limited</td>
<td>EGL</td>
<td>Finance and Insurance</td>
<td>Yes</td>
</tr>
<tr>
<td>Ecobank Ghana Limited</td>
<td>EGH</td>
<td>Finance and Insurance</td>
<td>Yes</td>
</tr>
<tr>
<td>Ecobank Transnational Incorporated</td>
<td>ETI</td>
<td>Finance and Insurance</td>
<td>No</td>
</tr>
<tr>
<td>GCB Bank Limited</td>
<td>GCB</td>
<td>Finance and Insurance</td>
<td>Yes</td>
</tr>
<tr>
<td>New Gold Issuer Limited</td>
<td>GLD</td>
<td>Finance and Insurance</td>
<td>No</td>
</tr>
<tr>
<td>HFC Bank (Ghana) Limited</td>
<td>HFC</td>
<td>Finance and Insurance</td>
<td>Yes</td>
</tr>
<tr>
<td>Mega African Capital Limited</td>
<td>MAC</td>
<td>Finance and Insurance</td>
<td>No</td>
</tr>
<tr>
<td>Standard Chartered Bank (GH) Ltd.</td>
<td>SCB</td>
<td>Finance and Insurance</td>
<td>Yes</td>
</tr>
<tr>
<td>Standard Chartered Bank (GH) Ltd.</td>
<td>SCB</td>
<td>Finance and Insurance</td>
<td>No</td>
</tr>
<tr>
<td>SIC Insurance Company Limited</td>
<td>SIC</td>
<td>Finance and Insurance</td>
<td>Yes</td>
</tr>
<tr>
<td>Societe Generale Ghana Limited</td>
<td>SOGEGH</td>
<td>Finance and Insurance</td>
<td>Yes</td>
</tr>
<tr>
<td>The Trust Bank (Gambia) Limited</td>
<td>TBL</td>
<td>Finance and Insurance</td>
<td>No</td>
</tr>
<tr>
<td>UT Bank Ghana Limited</td>
<td>UTB</td>
<td>Finance and Insurance</td>
<td>Yes</td>
</tr>
<tr>
<td>African Champion Industries</td>
<td>ACI</td>
<td>Manufacturing</td>
<td>Yes</td>
</tr>
<tr>
<td>Aluworks Limited</td>
<td>ALW</td>
<td>Manufacturing</td>
<td>Yes</td>
</tr>
<tr>
<td>Benso Oil Palm Plantation Limited</td>
<td>BOPP</td>
<td>Manufacturing</td>
<td>Yes</td>
</tr>
<tr>
<td>Company Name</td>
<td>Code</td>
<td>Department</td>
<td>Status</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-------</td>
<td>----------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Cocoa Processing Company</td>
<td>CPC</td>
<td>Manufacturing</td>
<td>Yes</td>
</tr>
<tr>
<td>Fan Milk Limited</td>
<td>FML</td>
<td>Manufacturing</td>
<td>Yes</td>
</tr>
<tr>
<td>Guinness Ghana Breweries Limited</td>
<td>GGBL</td>
<td>Manufacturing</td>
<td>Yes</td>
</tr>
<tr>
<td>Golden Web Limited</td>
<td>GSR</td>
<td>Manufacturing</td>
<td>Yes</td>
</tr>
<tr>
<td>Pioneer Kitchenware Limited</td>
<td>PKL</td>
<td>Manufacturing</td>
<td>Yes</td>
</tr>
<tr>
<td>PZ Cussons Ghana Limited</td>
<td>PZC</td>
<td>Manufacturing</td>
<td>Yes</td>
</tr>
<tr>
<td>Unilever Ghana Limited</td>
<td>UNIL</td>
<td>Manufacturing</td>
<td>Yes</td>
</tr>
<tr>
<td>AngloGold Ashanti Limited</td>
<td>AGA</td>
<td>Mining and Exploration</td>
<td>Yes</td>
</tr>
<tr>
<td>AngloGold Ashanti Ltd (AADS)</td>
<td>AADS</td>
<td>Mining and Exploration</td>
<td>No</td>
</tr>
<tr>
<td>Golden Star Resources Limited</td>
<td>GSR</td>
<td>Mining and Exploration</td>
<td>Yes</td>
</tr>
<tr>
<td>Mechanical Lloyd Company</td>
<td>MLC</td>
<td>Trading and Distribution</td>
<td>Yes</td>
</tr>
<tr>
<td>Produce Buying Company Limited</td>
<td>PBC</td>
<td>Trading and Distribution</td>
<td>Yes</td>
</tr>
<tr>
<td>Ghana Oil Company Limited</td>
<td>GOIL</td>
<td>Oil and Gas</td>
<td>Yes</td>
</tr>
<tr>
<td>Tullow Oil Plc</td>
<td>TLW</td>
<td>Oil and Gas</td>
<td>Yes</td>
</tr>
<tr>
<td>Total Petroleum Ghana Limited</td>
<td>TOTAL</td>
<td>Oil and Gas</td>
<td>Yes</td>
</tr>
<tr>
<td>Ayrton Drugs Manufacturing Co.</td>
<td>AYRTN</td>
<td>Pharmaceuticals</td>
<td>Yes</td>
</tr>
<tr>
<td>Starwin Products Limited</td>
<td>SPL</td>
<td>Pharmaceuticals</td>
<td>Yes</td>
</tr>
<tr>
<td>Clydestone (Ghana) Limited</td>
<td>CLYD</td>
<td>Information Technology</td>
<td>No</td>
</tr>
<tr>
<td>Transol Solutions Ghana Limited</td>
<td>TRANSOL</td>
<td>Information Technology</td>
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</tr>
<tr>
<td>Camelot Ghana Limited</td>
<td>CMLT</td>
<td>Printing and Publishing</td>
<td>Yes</td>
</tr>
<tr>
<td>Sam Woode Limited</td>
<td>SWL</td>
<td>Printing and Publishing</td>
<td>No</td>
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## APPENDIX 2: Risk Disclosure Checklist

<table>
<thead>
<tr>
<th>Type of Risk</th>
<th>Risk Disclosure Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Risk</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interest rate risk</td>
</tr>
<tr>
<td></td>
<td>Foreign exchange risk</td>
</tr>
<tr>
<td></td>
<td>Commodity price risk</td>
</tr>
<tr>
<td></td>
<td>Credit risk</td>
</tr>
<tr>
<td></td>
<td>Liquidity risk</td>
</tr>
<tr>
<td><strong>Strategic Risk</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Business portfolio</td>
</tr>
<tr>
<td></td>
<td>Product lifecycle</td>
</tr>
<tr>
<td></td>
<td>Competitors</td>
</tr>
<tr>
<td></td>
<td>Performance measurement</td>
</tr>
<tr>
<td></td>
<td>Product pricing</td>
</tr>
<tr>
<td></td>
<td>Business valuation</td>
</tr>
<tr>
<td></td>
<td>Industry</td>
</tr>
<tr>
<td></td>
<td>Climatic and weather conditions</td>
</tr>
<tr>
<td><strong>Operational Risk</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Customer satisfaction</td>
</tr>
<tr>
<td></td>
<td>Stock obsolescence</td>
</tr>
<tr>
<td></td>
<td>Product/service failure</td>
</tr>
<tr>
<td></td>
<td>Product development</td>
</tr>
<tr>
<td></td>
<td>Efficiency and performance</td>
</tr>
<tr>
<td></td>
<td>Reduction in production capacity</td>
</tr>
<tr>
<td></td>
<td>Information processing risk</td>
</tr>
<tr>
<td></td>
<td>Difficulty in accessing information</td>
</tr>
<tr>
<td></td>
<td>Technology risk</td>
</tr>
<tr>
<td></td>
<td>Brand name erosion</td>
</tr>
<tr>
<td></td>
<td>Sourcing</td>
</tr>
<tr>
<td></td>
<td>Internal controls failure or weakness</td>
</tr>
<tr>
<td></td>
<td>Human errors</td>
</tr>
<tr>
<td></td>
<td>Employee turnover</td>
</tr>
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</table>

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<table>
<thead>
<tr>
<th>Compliance and Integrity Risk</th>
<th>Environmental regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Health and safety risk</td>
</tr>
<tr>
<td></td>
<td>Legal and regulation risk</td>
</tr>
<tr>
<td></td>
<td>Reputation risk</td>
</tr>
<tr>
<td></td>
<td>Industry regulation (i.e. antitrust, fair competition)</td>
</tr>
<tr>
<td></td>
<td>Management and employee fraud</td>
</tr>
<tr>
<td></td>
<td>Penalties for compliance violations</td>
</tr>
<tr>
<td></td>
<td>Political risk</td>
</tr>
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</table>
APPENDIX 3: Risk Disclosure Quality Framework

<table>
<thead>
<tr>
<th>Quality Criteria</th>
<th>Disclosure Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relevance</strong></td>
<td>Disclosure of risk Management</td>
</tr>
<tr>
<td></td>
<td>Disclosure of risk occurrence probabilities</td>
</tr>
<tr>
<td></td>
<td>Disclosure of the impact of risk (positive or negative, quantitative or qualitative both current and expected)</td>
</tr>
<tr>
<td></td>
<td>Disclosure of Significant risk factors and risk concentrations</td>
</tr>
<tr>
<td></td>
<td>Disclosure of the impact of development in current activities of the company on the opportunities and threats that possess the company</td>
</tr>
<tr>
<td><strong>Understandability</strong></td>
<td>Disclosure of Specific definition for each type of risk</td>
</tr>
<tr>
<td></td>
<td>Definition of risk management</td>
</tr>
<tr>
<td></td>
<td>Disclosure of each type of risk separately</td>
</tr>
<tr>
<td></td>
<td>Using tables, graphs and illustrations along with descriptive narrative information</td>
</tr>
<tr>
<td></td>
<td>Definition for the measurement models used</td>
</tr>
<tr>
<td></td>
<td>Presentation of risk information in the context of the company's strategy, business model, and past performance</td>
</tr>
<tr>
<td></td>
<td>Presentation of risk information in the context of the company's plans and expectations for the future</td>
</tr>
<tr>
<td><strong>Comparability</strong></td>
<td>Consistency in the presentation bases of risk information from period to period</td>
</tr>
<tr>
<td></td>
<td>Include comparable risk information for year proceeding the reporting year</td>
</tr>
<tr>
<td></td>
<td>Consistency in the measurement bases of risk from period to period</td>
</tr>
<tr>
<td></td>
<td>Disclosure of any changes in disclosure or measurement bases and its causes and impact</td>
</tr>
<tr>
<td></td>
<td>Disclosure of any changes in risk treatment compared to the previous period</td>
</tr>
<tr>
<td></td>
<td>Disclosure of any changes in risk management strategies compared to the previous year</td>
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</tbody>
</table>

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<table>
<thead>
<tr>
<th><strong>Verifiability</strong></th>
<th>Disclosure of quantitative information about risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disclosure of information about measurement models used</td>
</tr>
<tr>
<td></td>
<td>Disclosure of the basic assumptions underlying the measurement models used</td>
</tr>
<tr>
<td></td>
<td>Disclosure of the limitations of the measurement used</td>
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</table>
APPENDIX 4: Decision Rules for Coding

- To identify risk disclosures a broad definition of risk will be adopted.

- Sentences are to be coded as risk items if they contain information relating to any opportunity or prospect, or of any hazard, danger, harm, threat or exposure, that has already impacted upon the company or may impact upon the company in the future or of the management of any such opportunity, prospect, hazard, harm, threat or exposure.

- The risk disclosures shall be classified into four major categories: financial risk, strategic risk, operational risk, and compliance and integrity risk.

- Tables (quantitative and qualitative) that provide risk information should be interpreted as one line equals one sentence and classified accordingly.

- A repeated risk disclosure shall be recorded as a risk disclosure each time it is discussed. This implies that the same risk disclosure can be coded more than once because each time it is mentioned it draws the attention of the reader.

- If a disclosure is too vague in its reference to risk, it shall not be classified as a risk disclosure.
### APPENDIX 5: Skewness/Kurtosis tests for Normality

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pr (Skewness)</th>
<th>Pr (Kurtosis)</th>
<th>adj chi2(2)</th>
<th>Prob &gt; chi2</th>
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</tbody>
</table>

### APPENDIX 6: Breusch-Pagan / Cook-Weisberg Test for Heteroskedasticity

<table>
<thead>
<tr>
<th>Breusch-Pagan / Cook-Weisberg Test (Model 1)</th>
<th>Breusch-Pagan / Cook-Weisberg Test (Model 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0: Constant variance</td>
<td>H0: Constant variance</td>
</tr>
<tr>
<td>Variables: fitted values of quantityrisk</td>
<td>Variables: fitted values of qualityrisk</td>
</tr>
<tr>
<td>chi2(1) = 16.41</td>
<td>chi2(1) = 16.39</td>
</tr>
<tr>
<td>Prob &gt; chi2 = 0.0369</td>
<td>Prob &gt; chi2 = 0.0218</td>
</tr>
</tbody>
</table>
APPENDIX 7: Wooldridge Test for Autocorrelation

<table>
<thead>
<tr>
<th>Wooldridge Test for Autocorrelation (Model 1)</th>
<th>Wooldridge Test for Autocorrelation (Model 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₀: no first-order autocorrelation</td>
<td>H₀: no first-order autocorrelation</td>
</tr>
<tr>
<td>F(1, 29) = 46.983</td>
<td>F(1, 29) = 16.768</td>
</tr>
<tr>
<td>Prob &gt; F = 0.0000</td>
<td>Prob &gt; F = 0.0003</td>
</tr>
</tbody>
</table>

APPENDIX 8: Hausman Specification Test for Quantity of Risk Disclosure

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fixed</th>
<th>Random</th>
<th>Difference</th>
<th>S.E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>0.0107937</td>
<td>0.008915</td>
<td>0.0018787</td>
<td>0.0037168</td>
</tr>
<tr>
<td>Frequency</td>
<td>-0.0095968</td>
<td>-0.0005453</td>
<td>-0.0090515</td>
<td>0.0036208</td>
</tr>
<tr>
<td>Expertise</td>
<td>0.0454104</td>
<td>0.0464385</td>
<td>-0.0010281</td>
<td>0.0086613</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.0176308</td>
<td>-0.0016517</td>
<td>-0.0159791</td>
<td>0.0175651</td>
</tr>
<tr>
<td>Independence</td>
<td>-0.2124187</td>
<td>-0.0973336</td>
<td>-0.1150851</td>
<td>0.1153542</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.0784377</td>
<td>0.0490545</td>
<td>0.0293833</td>
<td>0.0086339</td>
</tr>
<tr>
<td>chi²(5)</td>
<td>11.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob &gt; chi²</td>
<td>0.0544</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 9: Hausman Specification Test for Quality of Risk Disclosure Model

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fixed</th>
<th>Random</th>
<th>Difference</th>
<th>S.E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>0.0088515</td>
<td>0.0100623</td>
<td>-0.0012108</td>
<td>0.021356</td>
</tr>
<tr>
<td>Frequency</td>
<td>-0.0066077</td>
<td>-0.0033415</td>
<td>-0.0032663</td>
<td>0.002028</td>
</tr>
<tr>
<td>Expertise</td>
<td>0.0298035</td>
<td>0.0348503</td>
<td>-0.0050468</td>
<td>0.0047624</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.0742854</td>
<td>-0.0599115</td>
<td>-0.014374</td>
<td>0.0098296</td>
</tr>
<tr>
<td>Independence</td>
<td>-0.022295</td>
<td>-0.0092759</td>
<td>-0.0130191</td>
<td>0.0729678</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.0304546</td>
<td>0.0188447</td>
<td>0.0116099</td>
<td>0.0050242</td>
</tr>
</tbody>
</table>

chi2(5) 10.27
Prob>chi2 0.1136

APPENDIX 10: Fixed Effects Regression Results for Quantity of Risk Disclosure

| Variable    | Coef. | Std. Err. | Z     | P>|z| | VIF |
|-------------|-------|-----------|-------|------|-----|
| Size        | 0.0108| 0.0076    | 1.43  | 0.155| 1.22|
| Frequency   | -0.0096| 0.0097   | -0.99 | 0.325| 1.62|
| Expertise   | 0.0454| 0.0245    | 1.85  | 0.065| 1.30|
| Gender      | -0.0176| 0.0332   | -0.53 | 0.595| 1.36|
| Independence| -0.2124| 0.1289   | -1.65 | 0.101| 1.32|
| Firm size   | 0.0784| 0.0122    | 6.41  | 0.000| 1.64|
| Industry    | 0     |           |       |      | 1.50|
| Constant    | -0.1699| 0.1620   | -1.05 | 0.295|     |

R-square
Within       0.1688
Between      0.0809
Overall      0.0494
F(4, 29)     9.44       Prob > F 0.0000
Observations 315
APPENDIX 11: Fixed Effects Regression Results for Quality of Risk Disclosure

| Variable     | Coef. | Std. Err. | Z    | P>|z| | VIF |
|--------------|-------|-----------|------|-----|-----|
| Size         | 0.0089| 0.0051    | 1.73 | 0.085 | 1.22 |
| Frequency    | -0.0066| 0.0066   | -1.00| 0.316 | 1.62 |
| Expertise    | 0.0298| 0.0166    | 1.80 | 0.073 | 1.30 |
| Gender       | -0.0743| 0.0224  | -3.31| 0.001 | 1.36 |
| Independence | -0.0223| 0.0872  | -0.26| 0.798 | 1.32 |
| Firm size    | 0.3045| 0.0083    | 3.68 | 0.000 | 1.64 |
| Industry     | 0     |           |      |       | 1.50 |
| Constant     | 0.3055| 0.1096    | 2.79 | 0.006 |     |

R-square

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Within</td>
<td>0.0864</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>0.0426</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>0.0268</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F(4, 29) 4.40  Prob > F 0.0003
Observations 315