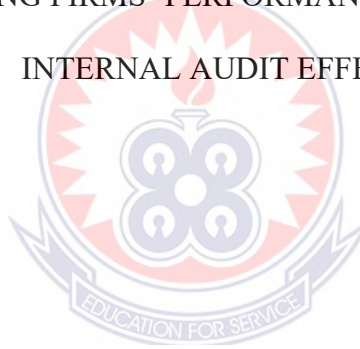


UNIVERSITY OF EDUCATION, WINNEBA

EFFECT OF INTERNAL CONTROL SYSTEMS ON GHANAIAN
MANUFACTURING FIRMS' PERFORMANCE: A MODERATING ROLE OF
INTERNAL AUDIT EFFECTIVENESS



JOSEPH KWEKU DANSO

2023

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A Dissertation in the Department of Accounting, School of Business, submitted to
the School of Graduate Studies, in partial fulfilment of the requirements for the
award of the degree of Master of Business Administration (Accounting) in the
University of Education, Winneba

OCTOBER, 2023

DECLARATION

Candidate's Declaration

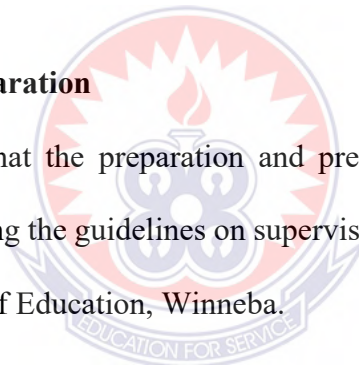
I hereby declare that this is the result of my original research and that no part of it has been presented for another degree at this university or elsewhere.

Candidate's Signature Date

Name:

Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised following the guidelines on supervision of thesis/dissertation laid down by the University of Education, Winneba.



Supervisor's Signature Date

Name:

ABSTRACT

The aim of this study is to assess the effect of internal control systems on the performance of Ghanaian manufacturing firms with a moderating role of internal audit effectiveness. A sample of 145 employees in the internal controls and audit department of the firms were used. This is a quantitative study that rides on an explanatory research design and partial least squares structural equation modelling estimation. The findings indicate that most Ghanaian manufacturing firms have been efficacious in their internal control systems. This is because they have achieved a high level of efficiency as far as their control environment as characterized by adherence to high ethical standards and organizational policies are concerned. It was further revealed that internal control system has a significant and positive effect on Ghanaian manufacturing firms' performance. This revelation is validated by the fact that the firms' commitment to making effective their control environment, risk assessment, control activities, information and communication and monitoring has had a significant influence on their performance. This implies that any firm having weak internal control mechanisms has the tendency of experiencing declining performance. It was finally found that internal audit effectiveness plays a significant moderating role in the causal relationship between internal control systems and Ghanaian manufacturing firms' performance. It was thus recommended to policymakers, managers/board of directors and other key stakeholders in the manufacturing industry to institute a well formidable and resourced internal audit department necessary to strengthen the firms' internal control systems which will eventually help improve their performance.

DEDICATION

To my wife, Mrs Mavis Danso and my children, Kobina Nhyira Debra Danso,
Neriah Ewuraba Danso and Michelle Adzepa Danso



ACKNOWLEDGEMENT

My deepest appreciation goes to my Supervisor, Dr. Charles Omane-Adjekum for supervising my work and giving me the necessary guidance. Your corrections and inputs were very valuable to the successful completion of this thesis. I also wish to appreciate the immense assistance of Mr David Kwabla Adegbedzi, the staff of Ghana Audit Service, Winneba and all the research assistants towards the completion of my work. Thanks to all the respondents who participated in this study and the various management of the study firms for their permission. I really appreciate the advice, encouragement, contribution and support from all those who made this dissertation possible. Lastly, to my wife, Mrs. Mavis Danso, for proofreading my work; I am very grateful for the love and support throughout my study.

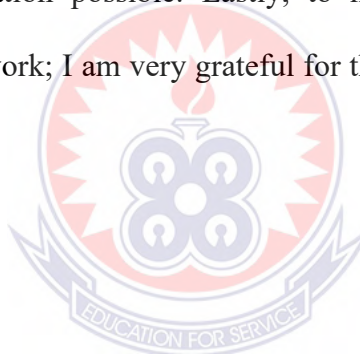


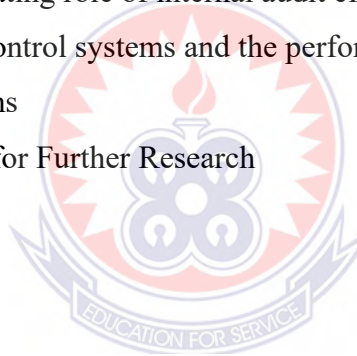
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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In the last two decades, a series of financial scandals and collapses have happened in several international corporations. For instance, the collapses of the World Telecom firm of America in 2002 and Enron in the United States in 2001 that works in the field of marketing, electricity and natural gas, which was called a sense of honesty and transparency, led to a loss of confidence in such companies and their demise pointed to the disappearance of the tight internal audit and the absence of a governance system (Hazaea et al., 2020). In light of the high pressure of competition at the local and international levels, internal auditing and its relationship with corporate performance have become critical issues. For international institutions and companies to ensure their survival, continuity, and competition with companies active in the same industry and to determine the impact of internal audit as a governance mechanism, the Institute of Internal Auditors developed international standards for internal auditing. Relatedly, the Organization for Economic Cooperation and Development (OECD) worked to create the principles of monitoring mechanisms to meet fierce international competition. Many firms have adopted various governing and monitoring tools in today's business world because of increased competitiveness and economic demands, including internal auditing systems.

According to IIA (2011), the internal audit is an objective and independent activity to increase the quality of the operation of institutions and work to add value to them.

As suggested by the Chartered Institute of Internal Auditors (2017), the main reason for the emergence of the need for audits (internal and external) is the separation of ownership and control of institutions so that the audit includes the examination and control process to report their view on the quality and reliability of the financial statements. Internal audit functions and the quality of the institutions' financial reports have a significant positive association, contributing to achieving competition (Drogala, 2015; Alzoubi, 2019) since it protects the firms against the risk of failure (Chae, 2020). Many factors contribute to enhancing the effectiveness of IA, including their contribution to improving the institutions' outputs, the most important of which are independence, following international standards, continuous training of auditors, and the use of modern control systems (Hazaea et al., 2020). Many of the challenges that businesses encounter, both internally and internationally, necessitate a process to help them stay active and relevant in the business world. As a result, the capacity to achieve its objective is heavily reliant on the technique used and the presence of well-established and effective internal control mechanisms.

The financial scandals involving Enron and WorldCom in the United States of America underscored the importance of Internal Control Systems (ICS), as well as reliable financial reporting, strengthened corporate governance, increased corporate responsibility, re-established auditors, established and provided efficiencies of internal audit, internal control, and risk management systems, and strengthened management and public oversight functions (Newman & Comfort, 2018). Following the scandals, the internal control system became one of the most

critical aspects and safety valves for long-term sustainability, corporate management, and commercial success. This is because the committee responsible for investigating the crises, SOX (The Sarbanes-Oxley Act), discovered that the major cause of the problems was a lack of effective Internal Control Systems. As a result of the worldwide accounting and auditing crises, the process of assuring the existence and efficacy of internal control systems within Ghana's manufacturing industry has also become increasingly crucial (Aksoy & Mohammed, 2020).

The ICS of an organisation is critical to fostering its competency and returns (Kantzos & Chondraki, 2006), as it ensures the efficient operation and use of the assets. According to Jokipii (2009), organisations enhance their internal control systems by constantly revising their internal standards. According to the Committee of Sponsoring Organizations of the Treadway Commission ([COSO], 2006), internal control is critical in handling an organisation's operations. It comprises the plans, strategies, and processes needed to achieve an organisation's goals and ensure operations function smoothly (COSO, 2006). Weak internal control systems might be the starting point for fraudulent activities. According to Millechamp (2009), the internal control framework is a self-directed assessment endeavour inside a company to analyse the techniques of control and the evaluation of completed activities. Furthermore, Fadzil et al. (2005) state that an operational internal control system ensures organisational performance. It is certified through systematic financial data analysis, asset protection and proper use, adherence to governing strategies, and certifying effectiveness in administrative activities.

According to Mawanda (2008), a well-established ICS in a financial institution contributes to good financial performance. This is because judicious and exact information is essential to good management, and effective internal control systems create transparency in financial reporting. According to COSO (2006) and Carmichael, Willingham and Carol (1996), the internal control components of an organisation include the control environment, risk assessment, control activities, information communication, and monitoring activities. These elements interact with one another, allowing the company to react to environmental changes (Pickett, 2011). As a result, ICS is intertwined with an organisation's operational operations, which leads to the organisation's success (Steinberg, 2011). However, Kaplan (2014) says that it is critical for every firm, regardless of size, to build its control framework in order to achieve its objectives since a poor internal control system leads to inadequate processes, which leads to theft. Every corporate entity's primary goal is to produce a profit, which is heavily influenced by the entity's performance. Performance metrics are measurements used to assess the viability and productivity of an organisation's activities (Bourne et al., 2003). Financial and non-financial performance evaluations are the two types of evaluations available (Smith, 2005). Financial performance measurements entail analysing an organisation's performance using indicators such as profitability margins, return on assets, and return on equity. Examples of non-financial performance metrics are service quality, resource allocation efficiency, inventiveness, and customer happiness (Epstein & Manzoni, 2010). According to Wanjohi (2013), performance evaluation

and appraisal are synonymous with control. The internal control system is a tool for evaluating financial performance.

1.2 Statement of the Problem

Manufacturing sectors continue to contribute substantially to the growth of both developed (KPMG, 2016; Trading Economics, 2018) and developing economies (Mukopi & Iravo, 2015; Modgil & Sharma). Manufacturing sectors have historically provided employment opportunities, innovation and revenues to governments through taxes and gross domestic products (Akoto et al., 2013; Bawa et al., 2018). Manufacturing sectors have been seen to contribute, on average, between 15% and 35%, and 30% and 45% to GDP and employment creation, respectively, in developing countries like Mexico, Taiwan, Brazil, and India (KPMG, 2016; Trading Economics, 2018).

Ghana's manufacturing sector, a significant part of the country's industrialisation strategy to become Africa's leading manufacturing hub, is undergoing substantial changes (Afum, 2020). From 2006-2017, the sector contributed an average of GH¢ 2173.25 million to the Gross Domestic Product, with a peak of GH¢ 2543 million in 2017, and accounted for 17.2% of companies listed on the Ghana Stock Exchange (Ghana Statistical Service (GSS), 2018). However, despite these achievements, the sector's share of GDP has been decreasing since 2006, losing over 40% of its original 10.2% share. By 2017, it was down to 4.5%. The situation has remained the same since then. Factors such as insufficient access to finance and poor management have been identified as reasons for the sector's

underperformance (Addo, 2017), emphasising the need for improved governance and internal control systems.

In the globalisation environment, progress in information technology, a growing degree of risk and fraudulent activities and the complexity of transacting businesses, internal control as an instrument for corporate governance has attracted great attention across company sectors internationally. The management of the challenges following globalisation extended the demand for suitable internal control frameworks to control risks and boost the performance of firms (Bastia, 2008). Agency theory illustrates clearly how crucial Internal Control Systems (ICS) framework is in increasing the performance of companies (Ahiabor & Mensah 2013; Jensen & Meckling 1976). Researchers have explored the link between performance and internal control around the globe (Agbigbi, 2016; Opong et al., 2016; Mawanda, 2008). For instance, the study by Agbigbi (2016), Opong et al. (2016) and Mawanda (2008) investigated the influence internal control has on the performances of Microfinance, NGOs and Higher learning institutions, respectively. Similar to these are studies by Al-Matari et al. (2017) and Mbilla et al. (2020). The dimensions of the ICS framework adopted by the researchers were indeed an issue. COSO accentuated that in assessing the efficacy of an organisation's internal control, all five components (control environment, control activities, monitoring, risk assessment and information and communication) ought to be employed by researchers in their studies. Otherwise, any findings produced employing some and not all will not be feasible for prudent decision-making.

However, Mawanda (2008) and Noel (2010) employed two and three variables in their analyses. Due to that, their investigations yielded poor R-squares.

In Ghana, various studies focused on internal control and its link with performance in several areas (Amissah, 2017; Akotey et al., 2013; Boadi et al., 2013; Gyebi & Quain, 2013; Opong et al., 2016). For instance, Amissah (2017), Akotey et al. (2013) and Boadi et al. (2013) focused primarily on insurance companies, while Gyebi and Quain (2013) premised their study on the electricity company of Ghana, Opong et al. (2016) on NGOs while Agbenyo et al. (2015) and Ekumah (2016) centred their study on Ghana Revenue Authority as Ayagre et al. (2014), Mbilla et al (2020), Owusu-Boateng et al. (2017), Agyemang, (2015) focused on Ghanaian banks. After carefully evaluating all accessible works, the researcher has not come across any study in Ghana on the manufacturing sector that studied both performance metrics (Financial and non-financial indicators). This means that there is an existing gap in the research about the impact of ICS on the manufacturing sector's performance in Ghana. In addition, most of these studies failed to use all the five components of the COSO's internal control framework. Therefore, to add to the literature on ICS, this study addresses this gap by investigating the effects of the five components of internal control systems on both the financial and non-financial performance of manufacturing companies in Ghana. Finally, a critical review of the literature indicates that no known study has been conducted in Ghana that assessed the moderating role of internal audit on the relationship between internal control systems and the manufacturing sectors' performance. Meanwhile, internal audit effectiveness is essential in strengthening the internal controls in

order to impact organisational performance. Against this background, this study seeks to assess the moderating role of internal audit effectiveness on the relationship between internal control systems and the performance of manufacturing companies in Ghana.

1.3 Purpose of the Study

The overriding purpose of this study is to assess the moderating role of internal audit effectiveness on the relationship between internal control systems and the performance of listed manufacturing firms in Ghana.

1.3.1 Research Objectives

The specific objectives of this are to:

1. assess the general effectiveness of internal controls in Ghanaian-listed manufacturing firms.
2. examine the effect of internal control systems on the performance of Ghanaian-listed manufacturing firms.
3. assess the moderating role of internal audit effectiveness on the relationship between internal control systems and the performance of Ghanaian-listed manufacturing firms.

1.4 Research Hypotheses

H₀: Internal control system of Ghanaian-listed manufacturing firms has no statistically significant effect on their performance

H₁: Internal control system of Ghanaian-listed manufacturing firms has a statistically significant effect on their performance

H₀: Internal audit effectiveness does not significantly moderate the relationship between internal control systems and the performance of Ghanaian-listed firms

H₂: Internal audit effectiveness significantly moderates the relationship between internal control systems and the performance of Ghanaian-listed firms

1.5 Research Questions

RQ₁: What is the general effectiveness of internal controls in Ghanaian-listed manufacturing firms?

1.6 Significance of the Study

This work would be valuable to both policymakers and scholars. In academia, this study will add to the understanding of literature on internal control, internal audit and performance. It will act as a stepping-stone for future research in the subject or related fields. Furthermore, this study will serve as a point of reference for government and interested organisations for the successful adoption of internal control rules related to the manufacturing firms.

Moreover, the results of this study will assist Ghanaian manufacturing firms to appreciate the efficacy or inefficacy of their internal control and the recommendations will let them understand the necessary actions to take in their quest to attaining organisational goals. The findings are essential in guiding policy directions as to the amount of effort and mechanisms to institute in order to have a well-functioning internal audit department necessary to strengthen the internal controls of the manufacturing firms.

1.7 Delimitation

The influence of internal control systems on performance in Ghanaian-listed manufacturing firms is examined in this study. The study made use of all the five internal control components as established by COSO (2006). They comprise control environment, risk assessment, information and communication, control actions and monitoring. The study is also delimited to the four building blocks of internal audit effectiveness such as Internal Audit Relationships (IARe), Internal Audit Resources (IAR), Internal Audit Processes (IAP) and Organizational Characteristics (OCH) as espoused by Lenz (2014). The study is also delimited to Ghanaian-listed manufacturing firms. Additionally, the study employed Partial Least Squares-Structural Equation modelling approach in analysing the collected data. By implication, the study is delimited to a quantitative research approach.

1.8 Limitations of the Study

Considering the choice of self-administered questionnaires, the study is prone to a potential limitation of response bias. Respondents may be inclined to provide socially desirable responses when assessing the effectiveness of internal controls and the performance within their organizations. This bias may result in overestimating the effectiveness of internal controls and performance due to concerns about their own job security or professional reputation. Employees may feel hesitant to express negative views or admit shortcomings in their internal control systems, leading to a potential lack of candid responses which may affect the validity of the results. To mitigate the impact of this limitation, the principle of anonymity was strictly adhered to which offered the respondents the confidence to

provide candid responses. Furthermore, the researcher relied on the integrity and objectivity ethical principles of professional accountants and auditors as enshrined in the ICAG's professional code of conduct to mitigate this bias.

1.9 Definition of Terms

Internal Control Systems: Internal controls are the mechanisms, rules, and procedures implemented by a company to ensure the integrity of financial and accounting information, promote accountability and prevent fraud.

Internal Audit Effectiveness: Internal audit effectiveness refers to the degree to which an internal audit function is able to achieve its objectives and add value to an organisation, risk management, control, and governance processes.

Organisational Performance: Organisational performance refers to the ability of an organisation to achieve its objectives effectively and efficiently. It measures how well an organisation performs in relation to its stated goals and objectives.

1.10 Organisation of the Study

The study is divided into five chapters. Chapter One is concerned with the background to the study, statement of the problem, objectives of the study, significance of the study, scope of the study, delimitations of the study, limitation of the study and definition of terms. Chapter Two dealt with the literature review. This chapter reviews relevant theoretical underpinnings and empirical studies that enrich understanding of internal controls, internal audit effectiveness and performance. Chapter Three outlines the research methods the researcher employs in the study. The chapter discusses the research design, population of the study, sample and sampling techniques, instrument for data collection, data collection

procedure and data analytical techniques. Chapter Four presents the results and discussions of the collected data. Chapter Five, the final chapter of this study, presented the study's summary, conclusions and recommendations emanating from the study's findings.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter of the study focuses on reviewing various related theories, including agency theory, institutional theory and contingency theory, that underpin internal control systems and their effect on the performance of firms. The chapter also reviews extant literature to give enough understanding of the concept under study, how the concept has been explored over the years and the extent to which it has been studied. The next section of the chapter focuses on constructing a conceptual framework and the development of the various hypothesis to be tested by the study.

2.2 Theoretical Review

This section reviews theories related to internal control systems, including contingency theory, institutional theory and agency theory. The aforementioned theories are further elaborated below.

2.2.1 Contingency Theory

The geographical jurisdiction in which a firm plies its trade exerts considerable influence on such an organisation's performance. The contingency theory postulates that an institution's well-being is predicted by the jurisdiction in which it operates, as reiterated (Drazin & Van de Ven, 1958). The pronouncers of this hypothesis make two assumptions. Eilifsen et al. (2014) and Donaldson (2006) state that no approach is universally superior and that there is no single ideal way to organise (Donaldson, 2006). The second assumption is that "the optimum technique, structure, or control system depends on the environment, risk profile,

strategy, size, organisational structure, and best activities at hand” (Amissah, 2017). According to contingency theory, an entity cannot achieve optimal performance unless it pays close attention to the environment in which it operates. Firms analyse the characteristics of the environment in which they operate and organise themselves to fit it, according to Jokipii (2006). As a result, an effective organisational structure is required to improve and maintain performance. In this case, Internal Controls (IC) as part of the organisational structure is the most effective tool. This theory is important to this study because the environment of an organisation matters a lot; it serves as the organisational attitude, which affects control awareness, and offers sound grounds for an active system of IC.

2.2.2 Institutional Theory

The institutional theory was propounded by Scott (1995). The elasticity of social systems is the focus of institutional theory. These systems seek to improve the public’s standard of life and financial situation. The fundamentals of social structure are regulative, normative, and cultural cognitive (Lagat, 2018). Institutional theory in accounting refers to the linkages between organisations and social institutions that contribute to the organisation’s success. According to institutional and neo-institutional theory, normative, coercive, and mimetic pressures generate environmental alignment and organisational practices, which eliminate organisational consistency. According to IIA (2011), the ideal solution to this problem is to build an effective internal control system. According to Lagat (2018), institutional theory’s flaw is its assumption of organisational positives while ignoring strategic behaviour. This idea is crucial to research because it depicts

how viable internal control systems are and how properly implemented IC's brings consistency and social expectation compliance to an organisation.

2.2.3 Agency Theory

There is a shareholder (owner) and a manager in every corporate entity (agent). They could be the same individual or two different people. Mitnick (1975) established the agency theory to understand the owner and agent interaction better. Ross established the economy theory of agency, while Mitnick produced the institutional theory of agency, according to Mitnick (2019). The relationship between a business's owners (owners) and the person in charge of the business's day-to-day operations is the focus of agency theory, often known as agency relationship (agent). The premise of agency theory is that when ownership and management are separated, one side has more information than the other (Drogala, 2015; Chae, 2020). To a large extent, the agents are better informed about the business entity's administration than the owners (Eilifsen et al., 2014).

The owner gives the agent extra negotiating power for the agent to represent the owner's best interests. According to Fink (2013), the agent with more information obsessed with personal motives forces the owner to believe the agent will strive to achieve personal goals to the detriment of the owner or business, and this may result in goal conflict (Eilifsen et al., 2014; Chae, 2020; Lenz, 2014). Hence, the owners need control methods to guarantee the agents work in the interest of the business to increase performance and achieve business goals.

The most frequent control mechanisms are internal control and audits. As a result, agency theory promotes using internal control systems as a check tool to defend

owners' interests. Internal control, according to COSO, when effectively implemented, leads to excellent results (COSO, 2006). According to Alzoubi (2019) and Donaldson (2006), the theory has a methodological flaw, making it impractical in the real world. Among the flaws are individuality, regressive simplicity, government defensiveness, and a faulty conceptual framework. The agency cost affects the business's performance because of a lack of trust between the owner and the agent, issues of information disproportionateness, and the fact that all parties are rational. According to Millechamp (2009), IC is the most effective method for reducing agency costs, emphasising the significance of this theory in this research. IC keeps track of the agent's actions and reports back to the owner, reducing the problem of information asymmetry and increasing performance, resulting in high-profit margins for both parties.

2.3 Empirical Review

Internal control systems (ICS) are crucial in enhancing the performance of organisations by ensuring the accuracy and reliability of financial reporting, safeguarding assets, and promoting operational efficiency. The role of internal audit effectiveness in moderating the relationship between ICS and corporate performance is an essential research area. This empirical review examines the effect of ICS on the performance of Ghanaian-listed manufacturing firms, focusing on the moderating role of internal audit effectiveness. These perspectives are explored in great depth in subsections 2.3.1, 2.3.2 and 2.3.3.

2.3.1 General Effectiveness of Internal Control Systems

In an attempt to gauge the general effectiveness of the internal control systems, Ayagre et al. (2014) assessed the efficacy of Ghanaian banks' internal controls. They used COSO's internal control framework's control environment and monitoring components. According to Ayagre et al. (2014), full knowledge of the two components provides a general indication of the whole system's performance. However, to COSO (2013), when evaluating an entity's internal control effectiveness, all five components (control environment, risk analysis, control activities, information and communication, and monitoring) must be considered, or the study's findings will be totally ineffective for decision-making. The findings of the data acquired through surveys were analysed using Statistical Package for Social Sciences (SPSS) and provided as means and standard deviation. The result indicates that both variables are effective and strong among Ghanaian banks. It was hence recommended for the banks' board to work much harder to achieve greater efficacy and should not be complacent with the results.

2.3.2 Effect of Internal Control Systems on Performance

To begin with, Mbilla et al. (2020) investigated the impact of internal control on banks listed on the Ghana Stock Exchange. The banks for the study were chosen using a purposive sampling technique. The study used both primary (300 questionnaires) and secondary data (financial statements of banks). Using descriptive and regression analyses, the result shows that information and communication have a weak significant effect on financial performance, as monitoring was found to have no significant effect on financial performance.

Therefore, the study recommends that managers of listed banks invest more in information and communication to improve performance. This result confirms the findings of Tetteh et al. (2022), who documented that technology positively moderates the nexus between a company's internal control systems and performance.

Ahmed and Muhammed (2018) also investigated the effect of ICS on the financial performance of the telecommunications sector (Asiacell) in Iraq's Kurdistan Region. The findings revealed a strong link between financial performance and internal controls, particularly control environment, risk assessment, information and communication, and control activities. Monitoring revealed a negative relationship. The study advised that the Asia cell management and the government's audit committee monitor internal control systems in a consistent and orderly manner. Furthermore, Asiligwa and Rennox (2017) investigated the effect of internal controls on the financial performance of Kenyan commercial banks. Primary data was collected using a structured questionnaire from a sample of 43 commercial banks. Using frequencies, correlation and regression, it was found that Kenyan commercial banks have strong financial performance due to the efficacy of their internal control systems. Despite the findings indicating a strong influence of internal control on performance, it was recommended that banks continue to adopt and invest in internal control systems since banks operate at high risk, and neglect might result in fraudulent activities. Umar and Dikko (2018) assessed the effect of internal control on Nigerian commercial banks' performance. A stratified random sampling technique was employed to select a sample of 382 bank staff. The data

gathered from the survey was analysed using SPSS v 23 and Smart PLS 3. The findings revealed that information and communication had a weak relationship with bank performance. However, the other four components of COSO's internal control framework significantly and positively impacted bank performance. It was hence recommended that banks should strengthen their information and communication channels. When knowledge is easily distributed and understood by subordinates, there is a lower likelihood of misbehaviour and fraudulent activity in any business. Similarly, Haddat and Pakure (2019) discovered the influence of internal control and supply chain integration on Jordanian bank performance and the link between service quality dimensions and customer happiness. Using descriptive statistics and exploratory factor analysis (EFA), it was found that supply chain integration and internal control significantly influenced financial success. In contrast, service quality positively and significantly impacts customer satisfaction. Other studies, such as Shahraki (2014) and Bhatnagar (2016), yielded similar findings. Lagat (2018) investigated the impact of internal control on the financial performance of government-owned sugar firms in Kenya. Data were obtained using a semi-structured questionnaire, which was analysed using descriptive and inferential statistics. The findings show that the government-owned sugar firms' internal control (control environment, risk assessment, information and communication, and monitoring) has a significant and positive impact on their performance in contrast to Mbilla et al. (2020) findings which showed monitoring to be negatively related. Control activity, on the other hand, was shown to be negatively related to performance. The study recommends that companies' management should be

flexible in managing and providing processes to reduce the potential of fraudulent actions. Kinyua et al. (2015) focused on assessing the internal control environment's effect on registered firms' financial performance on the Nairobi Stock Exchange. With a survey research design, a stratified random sampling technique was used to select 38 companies for the study. Internal audit, risk management, control environment, and corporate governance were considered the indicators of internal control. Using descriptive and inferential analyses, the results revealed a significant relationship between internal control environment and financial performance. Companies were urged to improve their financial performance by focusing more on internal control.

The importance of Internal Control System in the development of operational efficiency in the Sudanese banking industry was the focus of El Hadi and El Bashary's (2006) study. The focus of the research was to demonstrate the relevance of the Internal Control System and its diverse characteristics in various settings. They claimed that if there were any deficiencies in the organisational structure, establishing proper Internal Control System would be impossible. In the Sudanese financial system, Mostaf and Halim (2007) examined the techniques and methodologies of Internal Control Systems. They discovered the ICS methodologies and techniques and the scientific foundations of auditing. The study found that deploying Internal Control System resulted in increased banking security.

Opping et al. (2016) used data obtained from 118 respondents through questionnaire on how internal control affects faith-based Non-Governmental

Organizations (NGO's) performance in Ghana. Results indicated that, except for risk assessment, all parts of internal control were shown to positively influence the NGO's performance. The study recommends that NGOs' management should use conventional risk assessment methodologies and all-encompassing procedures to evaluate their efficacy and impact on operations on a regular basis.

Simon (2021) also focused on the effect of administrative internal control on performance in the telecommunications industry in South-South and South-East Nigeria. The study employed a descriptive survey research design. Structured questionnaires were administered to 259 randomly selected employees from the telecommunication industry. In addition, an interview was also conducted to obtain detailed responses from the employees. Data analysis was done using both descriptive (i.e., frequencies, percentages & mean) and inferential statistics (i.e., multiple regression). The results indicate that control environment and risk assessment components of internal control framework have statistically significant and positive effects on organisational performance. Thus, telecommunication industries that invested more in effective internal control systems are most likely to experience an improved overall performance as compared to those telecom industries that had a weak internal control system. The study recommended that management of firms in the telecommunication industries should further study the control environment on possible aspects they might have paid little attention to, which might have impacted performance. Also, management should develop additional control activities to sustain and boost the achievement of internal control.

Ogunbanjo and Bamgbose (2022) also investigated the functionality of each of the three internal control components, the effectiveness of the control system and its relationship with organisational performance. A sample of 210 respondents comprising employees from 6 Banks in Nigeria were used for the study. Data were analysed using correlation and one-way ANOVA to test the research hypotheses. The results revealed that internal control framework components such as control environment, risk management and information and communication have statistically significant and positive effect on the performance of deposit money banks in Nigeria. Hence, it was concluded that internal control effectiveness has a positive relationship with the financial performance of the Deposits Money Banks.

2.3.3 The moderating role of Internal Audit Effectiveness

The literature attempts to provide information necessary to suggest that internal audit effectiveness has the potency of strengthening the internal controls to impact a firm's performance. However, the literature fails to scientifically ascertain results from this perspective. For instance, Musah et al. (2022) examined whether corporate governance moderates the relationship between ICS effectiveness and Small and Medium scale Enterprises (SMEs') financial performance in Ghana. The results revealed that ICS effectiveness significantly affects SMEs' financial performance, and corporate governance plays a moderating role in this relationship. This finding indicates that effective ICS, combined with robust corporate governance, can enhance financial performance in Ghanaian SMEs. Hoai et al. (2022) studied the impact of ICS on innovation intensity and organisational performance in Vietnamese public sector organisations, with transformational

leadership as a moderating factor. The results showed a positive relationship between ICS and organisational performance, with transformational leadership enhancing this relationship. This study highlights the importance of effective ICS in promoting innovation and improving organisational performance in public sector organisations. Ganesan et al. (2018) explored the moderating role of the internal audit function on the relationship between the board of director characteristics and business performance in Malaysian firms. The study found that the internal audit function significantly moderates this relationship, emphasising the importance of internal audit effectiveness in improving business performance.

Awdat (2015) also examined the impact of internal audits in improving commercial bank financial performance. A sample of 65 internal auditors were selected, and Questionnaires were administered to a sample of 65 internal auditors in the Jordanian banks. Using multiple regression analysis, it was found that internal audit had a statistically minimal impact on the financial performance of Jordanian commercial banks.

Furthermore, Tetteh et al. (2022) investigated the impact of ICS on corporate performance among listed firms in Ghana, emphasising the moderating role of information technology. The study found a positive relationship between ICS and corporate performance, suggesting that effective ICS can lead to improved financial performance in Ghanaian firms. Similarly, Al-Waeli et al. (2020) conducted an analytical study on the impact of accounting information systems on financial performance with the moderating role of internal control in Iraqi industrial companies. The study showed a positive relationship between ICS and financial

performance, emphasising the importance of internal controls in improving corporate performance.

Fadzil et al. (2005) investigated the internal control systems and internal auditing methods of Malaysian enterprises. The focus of the research was to see if internal audit departments followed the Standards for Professional Practice of Internal Auditors (SPPIA). It also sought to determine if compliance with the SPPIA would have an impact on the quality of the Internal Control System. The findings indicated that the administration of the internal audit department, as well as professional skill, objectivity, and review, had a major impact on the Internal Control System monitoring element. Krishnan (2005) investigated the quality of the Audit Committee and its relationship with the Internal Control System (ICS) in Indian organisations. The findings revealed that committees with sufficient financial skills were substantially less likely to be linked to Internal Control System issues.

Hoai et al. (2022) examine the relationships between internal control systems (ICSs) and organisational performance in Vietnamese public sector organisations (PSOs), with particular emphasis on the mediating role of intensity of innovation and the moderating role of transformational leadership. Analysis of data obtained from 319 PSOs in Vietnam revealed that ICSs boost the intensity of innovation, which significantly affects organisational performance. Additionally, data demonstrated that innovation intensity fully mediated the relationships between ICSs and organisational performance and that transformational leadership reinforced the mediating relationships. The findings have implications for understanding the function of leadership and ICSs in managing innovation and

promoting performance in PSOs in emerging markets. Also, Sofyani et al. (2022) investigate the moderating effect of IT development on the relationship between internal control implementation and Higher Education Institution (HEI) quality performance. Using a survey method, questionnaires were administered to HEIs in all 34 provinces of Indonesia. In effect, 191 HEIs participated in the study. A second-order Partial Least Squares (PLS) estimation technique was utilised to test the relationship among the variables. The results indicated that IT development for internal control purposes was generally moderate. Additionally, IT development was positively associated with internal control implementation and strengthened the relationship between internal control and HEI quality performance.

Putra et al. (2022) examined organisational culture in moderating the influence of internal control and community participation on fraud prevention in managing village funds during the COVID-19 pandemic. The study used a sample of 27 villages in the province of Bali, with 3 villages in each district/city having the highest Village Fund Direct Cash Assistance, where questionnaires were administered to 161 respondents. By employing Partial Least Square (PLS) method, the results show that internal control and community participation have a positive effect on preventing fraud in managing village funds during the COVID-19 pandemic. The results also show that organisational culture strengthens the influence of internal control and community participation on fraud prevention in managing village funds during the COVID-19 pandemic.

Tetteh et al. (2020) examine the impact of internal control systems on performance among listed firms in Ghana and the moderating role of information technology. A

survey was conducted among top corporate executives of listed companies from different industrial sectors. The questionnaire data was analysed using the structural equation model. The study shows that there is a significant relationship between internal control systems (control environment, control activity, information, and communication) and the company's performance, measured by overall profitability. The results also indicate that information technology moderates the positive relationship between internal control and business performance. Nonetheless, the interaction effect was stronger for the control environment and control activities than the other internal control dimensions. It was, hence, recommended to management to institute a rigorous risk management framework and monitoring systems which will be able to detect all risks inherent in the internal control system to improve efficiency. It was further recommended for regular appraisal and evaluation of the internal control systems to ensure adequacy and effectiveness.

2.3 Conceptual Framework and Hypotheses Development

The section is to develop a conceptual framework to demonstrate the moderating role of internal audit effectiveness on the relationship between internal control systems and manufacturing firms' performance. The model is essential in guiding academicians, policymakers and practitioners to understand the potency of internal control systems in enhancing the performance of an organisation. It also explains how the effect of internal control systems may differ depending on the internal audit effectiveness. According to Millechamp (2009), a framework is a complex mental formulation of experience. A framework may be theoretical or conceptual.

According to Amissah (2017), theoretical framework is a logically developed and connected set of concepts and premises—developed from one or more theories—that a researcher creates to scaffold a study. To create a theoretical framework the researcher must define any concepts and theories that will provide the grounding of the research, unite them through logical connections, and relate these concepts to the study that is being carried out. However, a conceptual framework deals with the operationalisation of the theory (Ayagre et al., 2014). In other words, it represents the position of the researcher on the problem at hand and at the same time gives direction to the study. It may be entirely new, or an adoption of, or adaptation of, a model used in previous research with modification to fit the context of the inquiry (Ayagre et al., 2014). The framework developed in this study has three parts; internal control systems, internal audit effectiveness and performance. A review of literature on internal control systems has revealed five components of internal control as represented on the framework ICS1, ICS2, ICS3, ICS4 and ICS5, as disclosed by COSO (2006). This framework has been adopted in this study. Also, the internal audit effectiveness construct with its indicators was adopted from Lenz's (2014) four building blocks of internal audit effectiveness as depicted on the framework as IAE1, IAE2, IAE3 and IAE4. The performance component of the model was adopted from Krishnan's (2005) Balanced Scorecard framework of measuring performance broadly classified into financial performance measures as determined by FP1 and FP2 and nonfinancial performance measures as determined by NFP1, NFP2 and NFP3.

It can be observed from Figure 1 that internal control systems (ICS) have a positive effect on performance. According to Mbilla et al. (2020), bank management should boost investment in information and communication due to its significant impact on performance, and it would be prudent to invest in monitoring operations rather than completely ignoring them. This recommendation is consistent with Alzoubi (2019), who found that internal control systems components such as control environment, risk assessment, information and communication, and control activities have statistically significant positive effects on the performance of Asia's telecommunication industry. Additionally, Asiligwa and Rennox (2017) argue in their analysis that Kenyan commercial banks have strong financial performance due to the efficacy of their internal control systems. These findings are in conformity with Lagat (2018). Based on these revelations, it is hypothesised that:

H₁: Internal Control Systems (ICS) have a statistically significant and positive effect on manufacturing firms' performance.

The framework also demonstrates the moderating effect of internal audit effectiveness on the relationship between internal control systems (ICS) and performance. According to Asiligwa and Rennox (2017), to ensure that internal control systems work effectively to impact performance, there is a need for the Asia cell management and the government's audit committee to monitor the internal control systems in a consistent and orderly manner. Additionally, internal audit effectiveness creates added value to an organisation by helping management and the board of directors to evaluate and improve the effectiveness of risk management, internal control, and corporate governance processes (Lagat, 2018;

Asiligwa & Rennox, 2017; Bourne et al., 2003; Ayagre et al., 2014). Ege (2015) also provides evidence that internal audit quality is negatively associated with the likelihood of management misconduct.

Similarly, Krishnan (2005) indicates that internal audit effectiveness positively impacts financial reporting quality. Studies suggest that internal control quality is positively related to the sufficiency of resources to IAF (Ege (2015) and that companies with fewer resources available for IAF are more likely to disclose internal control deficiencies (Ege, 2015; Amissah, 2017; Alzoubi, 2019). Owing to the various findings ascertained by previous studies on the association and the nature of effect of the independent variables have on the dependent variable, the following hypothesis is put forth by the study.

H₂: Internal Audit Effectiveness (IAE) has statistically significant and positive moderating effect on the relationship between internal control systems and manufacturing firms' performance.

The reviewed studies consistently demonstrate a positive relationship between ICS and organisational performance across various contexts, including Ghanaian-listed manufacturing firms. The studies also highlight the importance of various moderating factors, such as information technology, corporate governance, transformational leadership, and internal audit effectiveness, in enhancing the relationship between ICS and firm performance. Specifically, the study by Ganesan et al. (2018) supports the notion that internal audit effectiveness can play a crucial moderating role in the relationship between ICS and corporate performance. Upon the thorough review conducted by the study, it is worthy to note that much of the

literature on the study of the effectiveness of internal control systems focused on exploring the narrative in the developed world with little being done in the case of emerging markets of which Ghana is of no exception, others also concentrated on different industries with little in the manufacturing sector.

Again, the ones conducted in Ghana have seemly side-lined the country's manufacturing sector even though the sector plays an indispensable role in the country's growth through its production contribution to gross domestic product. Also, the known study in the Ghanaian perspective was carried out on mostly banks; moreover, the ones in Ghana assessed the moderating role of other internal audit functionalities. Therefore, further research on the moderating role of internal audit effectiveness in the context of Ghanaian listed manufacturing firms can provide valuable insights and help develop strategies for improving organisational performance. **Error! Reference source not found.** depicts the interrelationships between the variables under study.

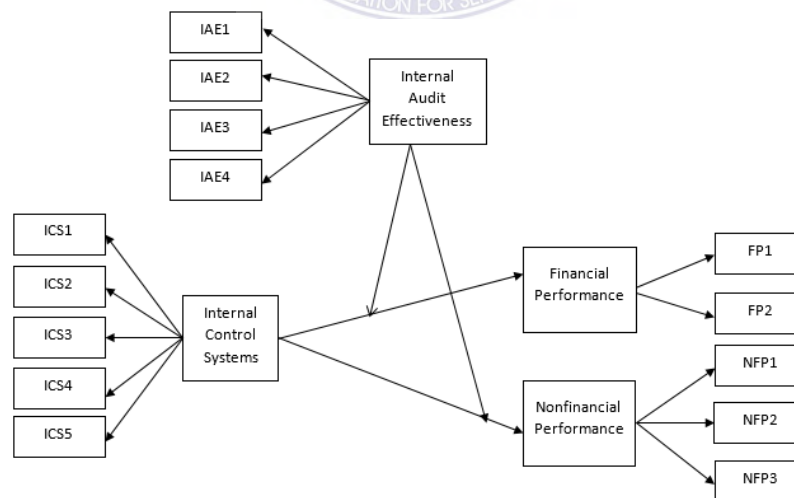


Figure 2. 1: Conceptual Framework showing the moderating effect of Internal Audit effectiveness on the internal control systems-performance nexus

Source: Author's construct (2023)

2.4 Chapter Summary

This chapter reviewed the various concepts, relevant theories and empirical evidence on internal control systems, internal audit effectiveness and performance. The chapter begins by presenting an in-depth review of three prominent theories: Contingency Theory, Institutional Theory, and Agency Theory. The review integrates empirical evidence from prior research to support the applicability and relevance of these theories in the context of internal control systems, internal audit effectiveness, and organizational performance. Key findings from empirical studies are highlighted to showcase how these theories have been used to explain or predict outcomes related to internal controls and internal audit effectiveness.

Drawing from the theoretical foundation and the empirical review, the chapter then proceeds to construct a comprehensive conceptual framework for the study. The framework captures the interrelationships between internal control systems, internal audit effectiveness, and organizational performance. The key variables, such as internal control systems, internal audit effectiveness, and performance, are clearly defined within the framework. The chapter illustrates how these variables interact, considering the moderating effects of the internal audit effectiveness.

In summary, this chapter provides a comprehensive overview of relevant theories, integrates empirical evidence, and develops a conceptual framework to guide the study's investigation into the relationships between internal control systems, internal audit effectiveness, and organizational performance. It sets the stage for hypothesis formulation and informs future research in this domain.

CHAPTER THREE

RESEARCH METHODS

3.0 Introduction

This study aims to assess the moderating role of internal audit effectiveness on the relationship between internal control and the performance of Ghanaian-listed manufacturing firms. This chapter focuses on the general methodology adopted to achieve the study's objectives. The issues considered in this chapter include research design, research approach, population, sample size and sampling technique, data and instrument for data collection, instrument development, instrument validity and reliability, data analysis and ethical consideration.

3.1 Research Design

Yin (2018) opined that research design is a blueprint that ideally provides a linkage between the research questions and the information to be gathered and how to be analysed. Research design can therefore be termed as a sequential blueprint on how planned research is carried out, operationalising elements in a way that can be measured and how the results from the empirical test will be interpreted. This study will employ an explanatory/causal research design to help achieve its objectives. The explanatory/causal research design is chosen because it provides a means of explaining the causal relationships among the variables.

3.2 Research Approach

According to Creswell (2013), a research approach is a plan and procedure consisting of the steps of broad assumptions to detailed methods of data collection, analysis, and interpretation. It is therefore based on the nature of the research

problem being addressed. A research approach could be quantitative, qualitative or mixed (Jebreen, 2012). The study employed a quantitative approach. Quantitative research can be defined as a research strategy that emphasises quantification in data collection and analysis (Bryman & Bell, 2011).

This research approach mainly highlights the use of measurement to describe underlying phenomena and relationships (Saunders et al., 2007). Quantitative research methods encompass survey modelling and statistical analysis (Nyame - Asiamah & Patel, 2009). The quantitative approach, therefore, systemically studies phenomena through mathematical calculations to confirm hypotheses constructed from theory (Saunders et al., 2007) Quantitative approach to data analysis and conclusion is the generic rule of the positivism philosophy (Crowther & Lancaster, 2015).

This approach is premised on the positivist philosophy since the researcher will objectively use questionnaires to gather information from the staff of Ghanaian-listed manufacturing firms to make meaningful conclusions and inferences without giving room for any external or internal human manipulation.

3.3 Population of the Study

Sekaran and Bougie (2016) adjudicate that population for a study refers to the total number of audiences or elements that resides or are found within the jurisdiction of a research case study where the researcher prefers to make a generalisation based on sample statistics. Weeks (2020) also opined that a population is an entire group of individuals, events or elements who possess an interested characteristic. This view was supported by Yin (2018), who asserted that a study's interested population

is the number of respondents in the entire environment of interest to the researcher (Yin, 2018). The population of this study is all staff of the 13 Ghanaian listed manufacturing firms.

3.4 Sample and sampling technique

This study bothers on assessing the effect of internal control systems on Ghanaian listed manufacturing firms' performance with a moderating role of internal audit effectiveness. The study employed a census sampling technique to select all 13 listed manufacturing firms, and a purposive sampling technique will be used to draw those staff in the firms' internal control and audit departments. According to Gupta and Kapoor (1970), census sampling is a type of sampling technique that considers all elements in the target population. This technique is suitable if the population is small (i.e., 200 or less), according to Singh and Masuku (2014). In effect, 145 staff were drawn for the analysis. The firms used for the study are contained in Table 3.1.

Table 3. 1:Sampled firms

Item No.	Firm	Type of Institution
1	Aluworks Ltd	Manufacturing
2	Benso Oil Palm Plantation Ltd	Manufacturing
3	Camelot Ghana Ltd	Manufacturing
4	Cocoa Processing Company	Manufacturing
5	Fan Milk Ghana Ltd	Manufacturing
6	Guinness Ghana Breweries Ltd	Manufacturing

7	Unilever Ghana Plc	Manufacturing
8	African Champion Industries Limited	Manufacturing
9	Ayrton Drug Manufacturing Limited	Manufacturing
10	Golden Web	Manufacturing
11	Hords Limited	Manufacturing
12	Sam Wood Limited	Manufacturing
13	Samba Foods Limited	Manufacturing

Source: Field Survey, (2023)

3.5 Data and Instrument for Data Collection

Primary data on internal audit effectiveness, internal control systems and performance will be collected using structured and closed-ended questionnaires. During the data collection, the purpose of the study will be explained to the respondents, and an assurance of anonymity and confidentiality will be given to the respondents before the administration. Describe the questionnaire

3.5.1 Independent variables

The independent variable was internal control systems. This is measured using the five components of internal control as espoused by COSO (2013), which are control environment (CE), risk assessment (RA), Information and communication (IC), Control activities (CA) and Monitoring (MON).

3.5.2 Dependent variables

The dependent variables are financial performance measured using Return on Equity (ROE) and non-financial performance indicators propounded by Kaplan and Norton (1992), such as internal business processes perspective, customer perspective and learning and growth perspectives.

3.5.3 Moderating variable

Internal audit effectiveness was used as the moderating variable. The internal audit effectiveness was measured using the four building blocks of internal audit as espoused by Lenz et al. (2014), which are Internal Audit Relationships (IARe), Internal Audit Resources (IAR), Internal Audit Processes (IAP) and Organizational Characteristics (OCH).

3.6 Instrument Development

A questionnaire was designed based on the information gathered from the relevant literature reviewed, among other crucial reasons. While preparing the questionnaire, utmost care was taken to ensure that the principles of a questionnaire, such as the wording of questions and organisation of questions as postulated by Kumar (2014), were incorporated to ensure that all questions asked elicited the needed information to achieve the objectives of the study.

3.6.1 Instrument Validity

Instrument validity is concerned with structuring a study's questions in a manner that can measure precisely what the questionnaire intends to measure (Kumar, 2014). This study employed face and content validity to ensure that the instrument measures what it purports to measure. According to Biddix (2017), content validity is the appropriateness of the content of a data collection instrument. This signifies that content validity determines whether the questions completely measure what a researcher wants to know. It includes taking representative questions from each of the sections of the unit and evaluating them against the desired outcomes. The items on the questionnaire were constructed based on the literature review. With this, the

researcher consulted audit experts (i.e., members of ICAG and Ghana Audit Service officials) and the supervisor to assess the validity of the statements contained in the questionnaire. The items were constructed to generate responses to answer the research questions and hypothesis as much as possible. Also, the content of the instruments was assessed by the supervisor in charge. The validity result, as contained in Table 3.2, indicates that out of the total of seventy-four (74) questions on the control environment, risk assessment, control activities, information and communication, monitoring, internal audit effectiveness, financial performance and non-financial performance, seventy-one (71) of them representing 96 per cent were adjudged valid.

Table 3. 2: Test of validity of Dependent, Moderating and Independent

Variables

Category	No. of Items	Valid Items	Validity (%)
Control Environment	11	10	91%
Risk Assessment	6	6	100%
Control Activities	7	7	100%
Information and Communication	7	7	100%
Monitoring of Control Systems	6	6	100%
Internal Audit Effectiveness	24	22	92%
Financial Performance	4	4	100%
Non-Financial Performance	9	9	100%
Total	74	71	96%

Source: Field Survey, (2023)

3.6.2 Instrument Reliability

From the enlightenment invoked by Yin (2018), instrument reliability is the tool's ability to produce consistent and repeated findings of a study. Instrument reliability was ensured using the test-retest procedure; thus, collecting the main data was preceded by piloting the test to ensure that the instruments yielded consistent and reliable results. To ascertain the instrument's reliability, the instrument was piloted at Effutu Municipality using 15 randomly sampled staff of firms located in the Effutu Municipality. Piloting of the instrument was conducted in Effutu Municipality since it was convenient for the researcher. The purpose of the piloting was explained to the staff sampled. After explaining the purpose of the pilot to them, the researcher distributed draft copies of the questionnaire to them. Cronbach's Alpha was conducted to assess the reliability of the pre-test data collected. The reason for adopting this test was to ascertain the instrument's internal consistency (Cortina, 1993). The coefficient of Cronbach's Alpha is between zero and one, and the nearer it is to one, the greater reliability steadiness (Sekaran & Bougie, 2016).

Sekaran and Bougie (2016) further posit that it is advisable to reverse all the negative worded items before being used for reliability tests in order to attain accurate reliability scores. In the case where the Cronbach's Alpha of a particular is low, that variable can be eliminated to enhance the consistency, but this can negatively affect the validity of the variables (Nantambelele & Gopal, 2018). For full reliability of a construct, according to Pallant, 2010 and Nunnally (1978), the coefficient of Cronbach's Alpha should be at least 0.7. From the reliability test

results, all the variables have Cronbach's Alpha coefficient above 0.7, indicating higher reliability. This is shown in Table 3.3.

Table 3. 3: Reliability test of Dependent, Moderating and Independent Variables

Category	No. of	Cronbach's	Consistency
Control Environment	11	0.832	Better
Risk Assessment	6	0.764	Good
Control Activities	7	0.745	Good
Information and Communication	7	0.734	Good
Monitoring of Control Systems	6	0.804	Better
Internal Audit Effectiveness	24	0.794	Good
Financial Performance	4	0.779	Good
Non-Financial Performance	9	0.824	Better

Source: Field Survey, (2022)

3.7 Data Analysis

Descriptive and inferential statistics were employed in this study. Descriptive statistics such as frequency, percentages, mean, and standard deviation were used to analyse the respondents' demographic information and assess the general effectiveness of Ghanaian-listed manufacturing firms' internal control systems (Objective 1). Further, Partial Least Square-Structural Equation Modeling (PLS-SEM) was employed to analyse the research model, thus assessing the effect of internal control systems on Ghanaian listed manufacturing firms' performance (Objective 2) as well as the moderating effect of internal audit effectiveness on the relationship between internal control systems and Ghanaian listed manufacturing firms' performance (Objective 3). Smart PLS (version 3.2) was used to perform the

PLS-SEM analysis to assess the research model. PLS-SEM is a comprehensive multivariate approach to statistical analysis that can simultaneously examine the relationships between the variables in a conceptual model, including measurement and structural components (Ringle et al., 2015).

To assess the conceptual model using PLS-SEM, this study assessed the measurement model by evaluating the reliability and validity of the reflective constructs, as well as the structural model, by assessing the coefficient of determination (R^2) and size and significance of path coefficients. Evaluating the reliability and validity of the model involves assessing the relationships between the Latent Variables (LVs) and their associated items, which is done by way of two key coefficients: composite reliability (CR) and average variance extracted (AVE) (Chin, 2010; Hair et al., 2011).

The reliability of the constructs was assessed using Composite Reliability. In assessing a model's reliability, the loading of each indicator on its associated LV must be calculated and compared to a threshold. Generally, the loading should be higher than 0.7 for indicator reliability to be considered acceptable (Hair et al., 2011). Both convergent and discriminant validities were assessed. The convergent validity was assessed using Average Variance Extracted (AVE). In order to assess the convergent validity of the measurement model, the AVE of the LVs should be higher than 0.5 for their convergent validity to be considered acceptable (Chin, 2010; Hair et al., 2011).

The discriminant validity was assessed using both Fornell–Larcker Criterion and Heterotrait-Monotrait (HTMT) Criterion. Discriminant validity is the extent to

which each LV is distinct from other constructs in the model (Hair et al., 2014). In order to establish discriminant validity, the square root of the AVE for each construct should be greater than all the correlations among the constructs and the other constructs in the model to meet the Fornell–Larcker criterion (Chin 2010; Hair et al. 2014). Previous studies have suggested construct thresholds of 0.85 and 0.9 for HTMT to establish discriminant validity (Henseler et al., 2015).

3.8 Model Summary

Model 1

Effect of internal control systems on Ghanaian manufacturing firms' performance

$$FP = B_0 + B_1CE + B_1_2RA + B_3IC + B_4_4CA + B_5MON + \varepsilon$$

$$NFP = B_0 + B_1CE + B_1_2RA + B_3IC + B_4_4CA + B_5MON + \varepsilon$$

Model 2

Moderating effect of Internal Audit Effectiveness on the relationship between internal control systems and the Ghanaian listed manufacturing firms' performance

$$\begin{aligned}
 FP = & B_0 + B_1CE + B_2RA + B_3IC + B_4_4CA + B_5MON + B_6(CE \times IAR) \\
 & + B_7(RA \times IAR) + B_8(IC \times IAR) + B_9(CA \times IAR) \\
 & + B_{10}(MON \times IAR) + B_{11}(CE \times IARe) + B_{12}(RA \times IARe) \\
 & + B_{13}(IC \times IARe) + B_{14}(CA \times IARe) + B_{15}(MON \times IARe) \\
 & + B_{16}(CE \times IAP) + B_{17}(RA \times IAP) + B_{18}(IC \times IAP) \\
 & + B_{19}(CA \times IAP) + B_{20}(MON \times IAP) + B_{21}(CE \times OCH) \\
 & + B_{22}(RA \times OCH) + B_{23}(IC \times OCH) + B_{24}(CA \times OCH) \\
 & + B_{25}(MON \times OCH) + \varepsilon
 \end{aligned}$$

$$\begin{aligned}
NFP = & B_0 + B_1CE + B_2RA + B_3IC + B_4CA + B_5MON + B_6(CE \times IAR) \\
& + B_7(RA \times IAR) + B_8(IC \times IAR) + B_9(CA \times IAR) \\
& + B_{10}(MON \times IAR) + B_{11}(CE \times IARe) + B_{12}(RA \times IARe) \\
& + B_{13}(IC \times IARe) + B_{14}(CA \times IARe) + B_{15}(MON \times IARe) \\
& + B_{16}(CE \times IAP) + B_{17}(RA \times IAP) + B_{18}(IC \times IAP) \\
& + B_{19}(CA \times IAP) + B_{20}(MON \times IAP) + B_{21}(CE \times OCH) \\
& + B_{22}(RA \times OCH) + B_{23}(IC \times OCH) + B_{24}(CA \times OCH) \\
& + B_{25}(MON \times OCH) + \varepsilon
\end{aligned}$$

3.9 Ethical Consideration

Taking the issue of ethics into account, the study questions were preceded with an ethical statement which included protection of personal data and confidential treatment of various responses. Again, each participant remains anonymous as names, emails and other contact details were not recorded. The researcher adhered to all internationally acceptable ethical procedures and practices, including specific procedures and ethical guidelines to guide dissertation writing at the University of Education, Winneba. They include the following: avoid plagiarism and divulging recorded sensitive information regarding questionnaire respondents, among others. The researcher approached eligible participants individually, invited them to participate, and explained the purpose of the study to them (Ngaya, 2016).

Using Oliver's (2010) treatise, participants were notified that their participation was voluntary and that they also have the right to cease their participation at any time with or without giving any notice when they feel the right to do so and without this decision affecting their work. Again, respondents were assured that their responses

would be treated with utmost confidentiality and without disclosure of their identity. Written informed consent will be obtained from all participants before collecting data from them (Al-Ghabeesh & Qattom, 2019).

The researcher declares that no participants would be forced to respond to any part of the questionnaire they feel insecure to answer. In totality, the study ensured that the two cardinal issues regarding ethical research thus, beneficence and non-maleficence, were considered throughout the study. Again, all the five ethical research principles advocated by (Smith, 2003) got featured. Ensuring these acceptable principles in research does not only serve ethical importance but also practical ones, as failure to incorporate this may lead to the study being criticised.

3.10. Chapter Summary

This study seeks to assess the effect of internal control systems on firms' performance with a moderating role of internal audit effectiveness. This chapter delved into the methodological foundation of the study. To this end, the chapter prescribed explanatory/causal research design and a quantitative research approach to address the research objectives. 145 staff from the internal audit and controls departments of all the 13 listed manufacturing firms were purposively sampled for the study. The chapter also prescribed a Partial Least Squares-Structural Equations Modeling approach to address the specific research objectives and test the research hypotheses.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The overriding purpose of this study is to assess the moderating effect of internal audit effectiveness on the relationship between internal control systems and Ghanaian manufacturing firms' performance. This chapter focuses on the results and discussion of the collected data on the effectiveness of internal control systems, internal audit effectiveness as well as the firms' performance indicators. It began with an analysis of the respondents' demographic information. The analysis went further to assess the effectiveness of the internal control systems of the sampled firms (Objective 1). Further, the effect of internal control systems on the firms' performance (Objective 2), as well as the moderating effect of internal audit effectiveness on the relationship between internal control systems and firms' performance (Objective 3), were also assessed using Partial Least Square-Structural Equation Modeling (PLS-SEM).

4.2 Respondents' Demographic Information

The demographic information elicited from the respondents pertained to gender, age, level of education and year of working experience. Details on these distributions are presented in Figure 4.1.

Table 4. 1: Respondents' Demographic

Variable	Sub-scale	Frequency	Percentage
Sex	Male	88	77.19%
	Female	26	22.81%
Age	18-25 years	2	1.75%
	26-30 years	12	10.53%
	31-40 years	55	48.25%
	41-50 years	25	21.93%
	Above 50 years	20	17.54%
Level of Education	First Degree	33	28.95%
	MSc/MBA/MPhil	52	45.61%
	Others (ACCA, ICAG, CFIA)	29	25.44%
Years of experience	1-3 years	14	12.28%
	4-6 years	28	24.56%
	7-9 years	49	42.98%
	Above 9 years	23	20.18%

Source: Field Survey, (2023)

As indicated in Table 4. 1, out of a total of one hundred and fourteen (114) respondents, 88 (77.19%) were found to be males, whereas (n = 26, 22.81%) were found to be females. Also, the respondents were dominated by managers and other employees in the internal control and internal audit departments within the “31-40 years” category, with the least representation from those within the “18-25 years” age range (n = 2, 1.75%). Again, the majority (n =52, 45.61%) of the respondents were found to have had their second degrees, with a considerable number (n = 29,

25.44%) of them having had a professional qualification as chartered accountants or chartered financial analysts. Further, the majority (n = 49, 42.98%) of the respondents under consideration fall within “7-9 years” of working experience. These revelations are critical as they offer a considerable level of assurance of obtaining valid responses as the respondents have an appreciable level of understanding of internal control, internal audit and performance issues.

4.3 Assessing the effectiveness of internal control systems

This section focuses on the assessment of internal control systems of Ghanaian manufacturing firms. To this end, the effectiveness of COSO’s internal control components is assessed. These components are control environment, risk assessment, control activities, information and communication and monitoring of internal control systems.

4.3.1 Assessing the Effectiveness of Control Environment

This section seeks to discuss the control environment component of the COSO’s internal control framework which focuses on the assessment of the Ghana’s manufacturing firms’ adherence to ethical and integrity values.

Table 4. 2:Effectiveness of Control Environment

Survey items	Mean	SD
Ethical standards observed by staff meet the forecasts of management and board of directors	3.91	0.87
Top management provides support for integrity and ethical values	4.15	0.54
Commitment to integrity and ethical values being demonstrated by management effectively	4.12	0.48

Policies are in place which give members the right to question and scrutinize management	3.73	0.67
The board of directors possesses full knowledge of Internal Control and implements it	3.95	0.75
The organizational structure is appropriate for the firm	3.98	0.62
Specific lines of authority and responsibility are established	3.96	0.68
The management/board of the organization comprehends the importance of internal controls	4.08	0.49
Regular employee evaluations are kept and made available to parties periodically	4.08	0.39
Mentoring and training opportunities are provided regularly to personnel by the organization	4.22	0.72
All necessary and essential checks of potential new employees are done, including training by the organization	4.11	0.85
Means of Means/ Average Standard Deviation	4.03	0.65

Source: Field Survey, (2023)

As indicated in Table 4. 2, 91(79.8%) of the respondents were either in agreement or strongly agree with the fact that ethical standards observed by staff meet the forecasts of management and the board of directors. This indicator is very critical as ethics form the foundation of the other components of the internal control systems of any organization. Relatedly, a chunk of the respondents attests to the claim that top management provides support for integrity and ethical values ($M=4.15$, $SD=0.54$). This is a palpable justification of the higher rating of the respondents being adherent to the ethical standards as set by management as a commitment to integrity and ethical values has been demonstrated by management effectively ($M=4.12$, $SD=0.48$). As a result of an appreciable knowledge of internal control possessed by the board of directors ($M=3.95$, $SD=0.75$), better

organizational structures are put in place ($M=3.98$, $SD=0.68$), which gives room for the establishment of clear lines of authority and responsibility in the organization ($M=3.96$, $SD=0.68$). As a result, policies giving the right to members to constructively criticize and put management on its toes are in place ($M=3.73$, $SD=0.67$). Due to the appreciation of the importance of internal controls by management/board of directors ($M=4.08$, $SD=0.48$), regular employee evaluations are kept and made available to parties periodically ($M=4.08$, $SD=0.38$). Again, mentoring and training opportunities are provided regularly to personnel by the organization ($M=4.22$, $SD=0.72$), which is a confirmation of management's commitment to ensuring internal controls are adhered to religiously.

4.3.2 Assessing the effectiveness of Risk Assessment on Ghanaian

Manufacturing Firms

One of the key components of COSO's internal control systems is risk assessment. This is because the anticipation of possible variances in the attainment of organizational goals and making provision for them is essential to business survival. It helps the firms to prepare for these risks adequately.

Table 4. 3: Effectiveness of Risk Assessment

Survey items	Mean	SD
Specification of goals is done by the organization, and risks that may cause hindrance identified	4.04	0.87
Management is reserving resources needed to achieve wanted operational and financial performance	4.01	0.54
Management has established concrete basis for the allocation of resources	4.05	0.48

Management put down measures to ensure that recognized risks would not end in material errors	4.00	0.67
The management of the organization properly implements risk management activities	3.93	0.75
The organization periodically develop and control KPIs	3.95	0.62
Means of Means/ Average Standard Deviation	4.00	0.73

Source: Field Survey, (2023)

It can be found in Table 4. 3 that most of the firms under consideration have been very effective as far as risk assessment is concerned. For instance, the majority ($M=4.04$, $SD=0.87$) of the respondents responded in the affirmative that the specification of goals is done by the firm and risks that may cause hindrance are identified. To ensure the effective attainment of the firms' goals, the organizations' management, as confirmed by majority of the respondents, is reserving resources needed to achieve wanted operational and financial performance ($M=4.01$, $SD=0.54$). Also, to ensure the equitable and goal directed allocation of resources, most of the respondents were in strong agreement with the fact that management has established concrete basis for the allocation of resources ($M=4.05$, $SD=0.48$). Due to management's commitment to reserving enough resources to ensure operational and financial performance, management of most of the organizations under consideration put down measures to ensure that recognized risks would not end in material errors ($M=4.00$, $SD=0.67$), an indication of proper implementation of risk management activities ($M=3.93$, $SD=0.75$). It was also confirmed by most of the respondents that the organizations periodically develop and control Key Performance Indicators ($M=3.95$, $SD=0.62$).

4.3.3 Assessing the Effectiveness of Control Activities of Ghanaian

Manufacturing Firms

This section assesses the specific policies and procedures Ghana's manufacturing firms implement to ensure that its objectives are achieved and that risks are managed effectively. These activities are a fundamental component of an organization's internal control system and are essential for maintaining the integrity of financial reporting, safeguarding assets, and ensuring compliance with laws and regulations. Among other things, the assessment focuses on authorization and approvals, segregation of duties, physical controls, IT controls, training and awareness, reconciliation and reviews and performance reviews.

Table 4. 4: Effectiveness of Control Activities

Survey items	Mean	SD
Management determines which relevant firm processes require control activities	4.24	0.62
Management considers control activities at various levels in the firm	4.19	0.36
Management isolates mismatch duties and develops alternative control activities where necessary	4.12	0.52
The firm keeps backups of daily activities and control the functionality of the files to prevent complete data loss in case of disasters	4.19	0.47
The firm has employed security guards at its various branches nationwide	4.66	0.55
The firm uses Close Circuit Television (CCTV) systems to monitor activities of staff	4.67	0.43
The firm has established policies which help it protect its assets and keep records of them, e.g. cash, equipment, disbursements and procurement	4.18	0.23

Means of Means/ Average Standard Deviation	4.22	0.54
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Source: Field Survey, (2023)

It can be observed in Table 4. 4 that most of the respondents responded in the affirmative that management of the organizations determines which relevant firm processes require control activities ($M=4.24$, $SD=0.62$). Identification of the relevant areas requiring control activities is very important as it brings to bear the possible loopholes that need to be closed in order to safeguard the integrity of the firm operations. To ensure robustness of the firm's internal control systems, management considers control activities at various levels in the firm as confirmed by the majority ($M=4.19$, $SD=0.36$) of the employees. It was also found that the majority ($M=4.12$, $SD=0.52$) of the respondents under consideration were in strong agreement with the fact that management isolates mismatch duties and develops alternative control activities where necessary. As a means of discouraging the planned destruction of documents by some unscrupulous staff, most ($M=4.19$, $SD=0.47$) of the firms keep backups of daily activities and control the functionality of the files to prevent complete data loss in case of disasters.

Relatedly, all the firms under review have employed security guards at their various branches nationwide in the quest to ensure the safety of the properties, as confirmed by all the respondents ($M=4.66$, $SD=0.55$). In order to augment the efforts of securities, all the firms sampled were found to have been using Close Circuit Television (CCTV) systems to monitor the activities of staff ($M=4.67$, $SD=0.55$). Most ($M=4.18$, $SD=0.23$) of the respondents were also in agreement with the claim that the firms have established policies which help them protect their assets and

keep records of them, for instance, cash, equipment, disbursements and procurement.

4.3.4 Assessing the Effectiveness of Information and Communication of Ghanaian Manufacturing Firms

Information and communication, as defined in COSO's internal control framework, refer to the processes and activities an organization uses to gather, create, and disseminate information relevant to its internal control system. Effective information and communication are crucial for an organization to understand, manage, and report on its internal controls and achieve its objectives. This section seeks to gauge Ghana's manufacturing firms from this perspective.

Table 4. 5: Effectiveness of Information and Communication

Survey items	Mean	SD
There is timely flow of information within all sections of my organization	4.2	0.57
The firm carries out accounting activities in accordance with applicable regulations	4.25	0.41
The firm's accounting system provides for separate identification of each transaction	4.28	0.52
Effective communication exists between management and the board of directors so that both have information needed to fulfil their roles with respect to the firm's purposes	4.25	0.28
All staff understand their role in the central system and how their activities relate to others	4.17	0.45
All staff understand that, they are accountable for activities they conduct	4.17	0.65
Management executes implementation and communication of updated policies properly	4.13	0.35

Means of Means/ Average Standard Deviation	4.21	0.68
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Source: Field Survey, (2023)

As far as information and communication are concerned (see Table 4. 5), the majority ($M=4.2$, $SD=0.57$) of the respondents subscribe to the claim that there is timely flow of information within all sections of the firms. This is critical as timely access to information by employees has the tendency to enhance controls in the firms. In order to ensure faithful representation and relevance, most of the firms carry out accounting activities in accordance with applicable regulations ($M=4.25$, $SD=0.41$). It was also confirmed by the majority ($M=4.28$, $SD=0.52$) of the respondents under consideration that the firms' accounting systems provide for separate identification of each transaction, which helps in ensuring responsibility, accountability and separation of powers, which are the key ingredients of internal controls as all staff understand that they are accountable for activities they conduct ($M=4.17$, $SD=0.65$). Also, effective communication exists between management and the board of directors so that both have the information needed to fulfil their roles with respect to the firms' purposes, as attested to by the majority ($M=4.25$, $SD=0.28$) of the respondents. All staff understand their role in the central system and how their activities relate to others, as confirmed by most of the respondents ($M=4.17$, $SD=0.45$), and management executes the implementation and communication of updated policies properly ($M=4.13$, $SD=0.35$).

4.3.5 Assessing the Effectiveness of Monitoring of Control Systems of Ghanaian Manufacturing Firms

Monitoring of activities in an organization is an essential tool used to ensure that the desired results are achieved effectively. For this reason, the role of monitoring in internal control cannot be overemphasized, as it ensures that internal control activities are followed effectively.

Table 4. 6: Assessing the Effectiveness of Monitoring of Control Systems

Survey items	Mean	SD
The firm periodically measures business proceedings for example cash management	4.46	0.56
Firm frequently audits the branches to determine whether policies and procedures are being applied, as they should be	4.29	0.39
Periodic feedback on monitoring activities and risk is communicated to management	4.27	0.44
There is a specific measure that ensures easy report of actual or suspected fraud	4.08	0.48
The firm periodically evaluates internal controls per the available laws	4.16	0.55
The firm periodically monitors branches to prevent misallocation of resources and wrong implementation of resources	4.07	0.24
Management executes implementation and communication of updated policies properly	4.2	0.53
Means of means/ Average Standard Deviation	4.22	0.72

Source: Field Survey, (2023)

As contained in Table 4. 6, the majority of the respondents were of the view that the firms periodically measure business proceedings, for example, cash management ($M=4.46$, $SD=0.56$), and frequently audit the branches to determine

whether policies and procedures are being applied, as they should be ($M=4.29$, $SD=0.39$). It has been a practice for most of the firms to communicate to management periodic feedback on monitoring activities and risk ($M=4.27$, $SD=0.44$) as there is a specific measure that ensures easy report of actual or suspected fraud ($M=4.08$, $SD=0.48$).

To ensure the relevance of their internal control systems, most of the firms periodically evaluate internal controls per the status that governs them ($M=4.16$, $SD=0.55$). It was also revealed by the majority of the firms' employees that their firm periodically monitors branches to prevent misallocation of resources and wrong implementation of resources ($M=4.07$, $SD=0.24$). Finally, management of most of the firms in question were found to have been executing the implementation and communication of updated policies properly ($M=4.2$, $SD=0.53$).

4.4 Assessment of Measurement Model

In this section, construct reliability and validity were assessed. In order to assess the construct reliability, Composite Reliability was used. Both convergent and discriminant validity were assessed. The convergent validity was assessed using Average Variance Extracted (AVE), whereas the discriminant validity was assessed using both the Fornell-Larcker Criterion and the HTMT Criterion.

4.4.1 Construct Reliability and Validity

This section sought to assess the measurement model of constructs. In assessing the reliability of Internal Control Systems (ICS), the loadings of each of its indicators were assessed. The loadings (correlation coefficients) between Control Environment (CE) and ICS, Risk Assessment (RA) and ICS, Control Activities

(CA), Information and Communication (IC) and ICS and Monitoring (MON) and ICS were 0.887, 0.795, 0.863, 0.811 and 0.766 respectively. These loadings were considered acceptable, according to Hair et al. (2011). This has culminated in a high Composite Reliability of 0.896, which was also considered acceptable since it was above 0.70. Again, all the indicators of Internal Audit Effectiveness (IAE) were considered reliable since their loadings with their construct were more than 0.70, resulting in a composite reliability of 0.855. In addition, financial performance was also said to be reliable since all its indicators had loadings above 0.70 with a composite reliability coefficient of 0.799. Finally, the non-financial performance was also said to be highly reliable since all its indicators were found to have higher loadings beyond the threshold of 0.70 with a composite reliability of 0.822.

In assessing the convergent validity, Average Variance Extracted (AVE) was employed. The results indicated that each of the indicators of the constructs under review converge to define their respective constructs. For example, all the five indicators of Internal Control Systems converge to measure their construct, culminating into an AVE of 0.685. This construct is considered valid since its AVE was above 0.5 (Vinzi et al., 2010; Hair et al., 2011). Also, the convergent validity of Internal Audit Effectiveness (IAE) was also considered acceptable since it indicated AVE of 0.708. The results of Financial Performance (FP) and Non-financial Performance (NFP) were also in sync with the preceding results, as they showed AVE of 0.664 and 0.715, respectively. These findings are shown in Table 4. 7.

Table 4. 7: Composite Reliability and Convergent Validity

Construct/Associated indicators	Loadings	Composite Reliability	Average Variance Extracted (AVE)
Internal Control Systems (ICS)		0.896	0.685
CE	0.887		
RA	0.795		
CA	0.863		
IC	0.811		
MON	0.766		
Internal Audit Effectiveness (IAE)		0.855	0.708
IAR	0.872		
IARe	0.724		
IAP	0.875		
OCH	0.885		
Financial Performance (FP)		0.799	0.664
FP1	0.821		
FP2	0.782		
FP3	0.754		
FP4	0.896		
Non-Financial Performance (NFP)		0.822	0.715
NFP1	0.822		
NFP2	0.788		
NFP3	0.893		
NFP4	0.895		
NFP5	0.745		
NFP6	0.823		
NFP7	0.881		

Source: Field Survey, (2023)

4.4.2 Assessment of Discriminant Validity

Discriminant validity is the extent to which each LV is distinct from other constructs in the model (Hair et al., 2014). In order to establish discriminant validity, the square root of the AVE for each construct should be greater than the correlations between the construct and the other constructs in the model to meet the

Fornell-Larcker criterion (Chin 2010; Hair et al. 2014). Previous studies have suggested construct thresholds of 0.85 and 0.9 for HTMT to establish discriminant validity (Henseler et al., 2015). As indicated in Table 4. 8, the model possesses an acceptable discriminant validity. This is because using the Fornell-Larcker Criterion indicates that each of the constructs is distinct from each other as the square root of the AVE for each construct was found to be greater than the correlations between the construct and the other constructs in the model. For example, the square root of the AVE of ICS was 0.828, which is greater than the correlations between ICS and the other constructs such as IAE, FP and NFP. Considering the HTMT Criterion in measuring the discriminant validity of the model, it was found that the model's discriminant validity was acceptable since all its values were below 0.85; hence, the constructs were distinct from another.

Table 4. 8:Assessment of Discriminant Validity

	Discriminant validity (Fornell–Larcker Criterion)				Discriminant validity (HTMT Criterion)			
	ICS	IAE	FP	NFP	ICS	IAE	FP	NFP
ICS	0.828							
IAE	0.335	0.841			0.477			
FP	0.188	0.283	0.815		0.545	0.536		
NFP	0.355	0.233	0.336	0.846	0.663	0.488	0.553	-

Source: Field Survey, (2023)

4.5. Assessment of Structural Model

In this section, the structural model was assessed using the coefficient of determination (R^2) and the size and significance of path coefficients. Under this,

the effect of internal control systems on Ghanaian manufacturing firms' performance, as well as the moderating effect of internal audit effectiveness on the relationship between internal control systems and Ghanaian firms' performance, were assessed. The results were obtained by using 5000 bootstraps resample.

4.5.1 Effect of Internal Control Systems on Ghanaian Manufacturing Firms' Performance

As contained in Table 4. 9 and Figure 4 1, it was indicated that Internal Control Systems had a statistically significant effect on Ghanaian manufacturing firms' performance. For example, Internal Control Systems were found to have a statistically significant effect on Ghanaian manufacturing firms' financial performance ($\beta = 0.492$, p-value = 0.005) and Ghanaian manufacturing firms' non-financial performance ($\beta = 0.521$, p-value = 0.003). This result indicates that a unit improvement in the Internal Control Systems of Ghanaian manufacturing firms could cause about a 49 per cent increase in their financial performance and about 52 per cent in their non-financial performance. The model was fit as about 77 per cent of the variability in the financial performance ($R^2=0.771$) and about 79 per cent of the variability in the non-financial performance ($R^2=0.792$) of the firms could be accounted for by the changes in the Internal Control Systems of the firms. The model, thus, has a high explanatory power (Hair et al., 2014). From the results, since the p-values were less than 0.05, the research hypothesis is supported; hence, a conclusion is made that internal control systems has a statistically significant effect on Ghanaian manufacturing firms' performance.

4.5.2 The Moderating effect of Internal Audit Effectiveness on the Relationship between

Internal Control Systems and Ghanaian Manufacturing Firms'

Performance

This subsection is focused on assessing the possibility and extent of the moderating role played by internal audit effectiveness in the causal relationship between COSO's internal control components and firms' financial and non-financial performance. The indicators of the internal control system include control environment, risk assessment, control activities, information and communication and monitoring. The indicators of internal audit effectiveness include Internal Audit Relationships (IARe), Internal Audit Resources (IAR), Internal Audit Processes (IAP) and Organizational Characteristics (OCH) as espoused by Lenz et al. (2014). Drawing from the results as indicated in Table 4. 9 and Figure 4 1, it can be reliably inferred that internal audit effectiveness significantly moderates the relationship between internal control systems and Ghanaian manufacturing firms' performance. For example, the model showed a significant and positive interaction effect of internal control systems and internal audit effectiveness on Ghanaian manufacturing firms' financial performance (ICS*IAE->FP) ($\beta = 0.531$, p-value = 0.002). This result indicates that the effect of internal control systems on Ghanaian manufacturing firms' financial performance will be higher in the presence of high internal audit effectiveness. In addition, the model, again, showed a statistically significant and positive interaction effect of internal control systems and internal audit effectiveness on Ghanaian manufacturing firms' non-financial performance

(ICS*IAE->NFP) ($\beta = 0.566$, p-value = 0.003). This result also implies that the effect of internal control systems on Ghanaian manufacturing firms' non-financial performance, such as improved quality products and services, increased customer base, prompt service delivery, and high employee retention ratio, among others, will be higher in the presence of high internal audit effectiveness. Drawing from the results, since there was not enough evidence to reject the research hypothesis (p-value < 0.05), the research hypothesis is supported, and a conclusion is therefore drawn that internal audit effectiveness significantly moderates the relationship between internal control systems and Ghanaian manufacturing firms' performance.

Table 4. 9: Hypothesis Testing

Relationships	Path Coefficients	T-Value	P-Value
ICS ->FP	0.492	2.383	0.005
ICS->NFP	0.521	3.211	0.003
IAE->FP	0.233	2.772	0.003
IAE->NFP	0.283	2.335	0.008
ICS*IAE->FP	0.531	3.455	0.002
ICS*IAE->NFP	0.566	2.991	0.003

Source: Field Survey, (2023)

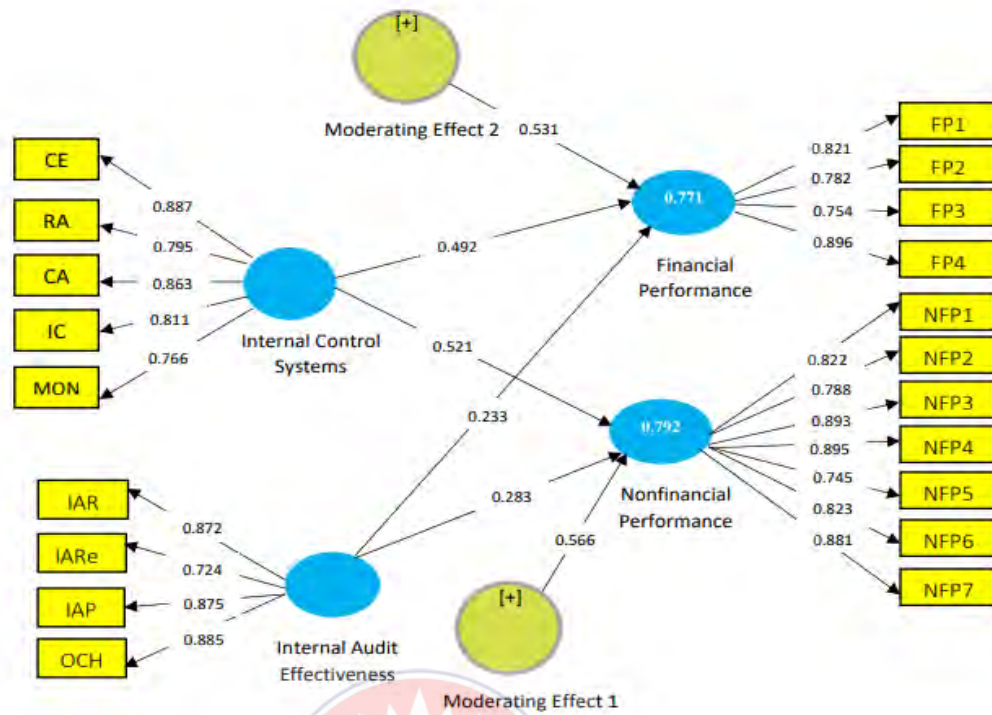


Figure 4 1: A structural model demonstrating the moderating effect of Internal Audit Effectiveness on the relationship between internal control systems and Ghanaian manufacturing firms' performance

4.6 Discussion of Results

From the foregoing discussions, it is palpably clear that internal control systems were found to have a statistically significant and positive effect on Ghanaian manufacturing firms' performance. This finding has underscored the essence of having a robust internal control system in Ghanaian firms, which could have the tendency of changing the fortunes of the manufacturing industry. This implies that any firm or organization that ensures an effective control environment, effective risk assessment, effective control activities, effective and efficient information and communication systems and effective monitoring systems will perform creditably

well. Again, internal control systems having a positive effect on organizational performance is an indication that robust internal control systems engender efficiency and effectiveness of the firm's operations by reducing waste, errors, and fraud (AICPA, 2013; Committee of Sponsoring Organizations of the Treadway Commission [COSO], 2013) which could reflect in its performance. Additionally, strong internal control systems enhance the quality and timeliness of the firm's internal and external reporting by ensuring the accuracy, completeness, and consistency of the information (AICPA, 2013; COSO, 2013). Obviously, a firm with an efficient internal control system could increase the confidence and trust of the firm's stakeholders, such as customers, suppliers, investors, regulators, and employees (AICPA, 2013; COSO, 2013; Knechel & Salterio, 2016) which may ultimately result into high revenues. Putting better internal control systems in place could support the firm's strategic objectives and risk management by aligning the firm's activities with its vision, mission, and values (AICPA, 2013; COSO, 2013). This finding is in conformity with previous studies (Ayagre et al., 2014; Mbilla et al., 2020; Ahmed & Muhammed, 2018; Asiligwa & Rennox, 2017; Mohammed, 2020; Shahraki, 2014; Bhatnagar, 2016; Lagat, 2018; Bayyoud & Sayyad, 2015). For example, Ahmed and Muhammed (2018) investigated the association between Internal Control Systems (ICS) and performance in the telecommunications sector in Iraq's Kurdistan Region. The study's findings revealed a strong link between financial performance and internal controls, particularly control environment, risk assessment, information and communication, and control activities. Again, Asiligwa and Rennox (2017) argue in their study that Kenyan commercial firms

have strong financial performance, and the secret behind this performance was the efficacy of internal control systems put in place by the firms. In addition, Mohammed (2020) studied the effectiveness of internal control systems (ICS) of banks operating in Ghana and the impact it has on their performances. The results revealed that internal control systems have a significant effect on the performance of Ghanaian banks.

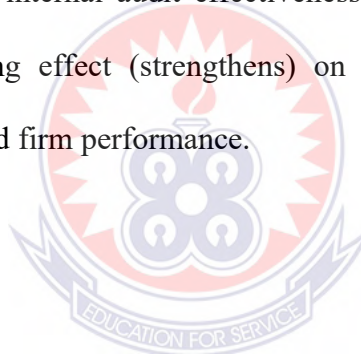
Furthermore, internal audit effectiveness was found to have a statistically significant and positive moderating effect on the relationship between internal control systems and firms' performance. This is an indication that for internal control systems to be effective in influencing performance, there is a need to ensure the internal audit of the organization is very effective. This is the surest way to achieve the desired results. This is, therefore, a clarion call on the management of the firms to ensure a properly constituted and adequately resourced internal audit department so that the internal control systems can be well strengthened in a quest to enhance their performance.

4.7 Chapter Summary

This chapter was dedicated to analysing and discussing the results of the study. The study began by assessing the demographic information of the respondents, and it was found that the majority of the respondents fall with "31-40 years" age range, indicating a youthful workforce. Again, the majority of the respondents were found to have had their second degrees with a considerable number of them having had a professional qualification as chartered accountants or chartered financial analysts. Further, the majority of the respondents under review have had a considerable

number of years of working experience. These revelations are critical as they offer a considerable level of assurance of obtaining valid responses as the respondents have an appreciable level of understanding of internal control, internal audit and performance issues.

The analysis went further to assess the effect of the internal control system on firm performance, and it was revealed that the internal control system, indicated by control environment, risk assessment, control activities, information and communication and monitoring, has statistically significant and positive effect on Ghanaian manufacturing firms' financial and non-financial performance. It was further found that internal audit effectiveness has a statistically significant and positive moderating effect (strengthens) on the relationship between internal control systems and firm performance.



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The overarching aim of this study was to assess the moderating effect of internal audit effectiveness on the relationship between internal control systems and Ghanaian manufacturing firms' performance. The specific objectives to achieve this aim were to (i) assess the general effectiveness of internal controls in Ghanaian-listed manufacturing firms, (ii) examine the effect of internal control systems on the performance of Ghanaian-listed manufacturing firms and (iii) assess the moderating role of internal audit effectiveness on the relationship between internal control systems and the performance of Ghanaian listed manufacturing firms.

5.1 Summary of the Study

A sample of 114 employees of 13 Ghanaian manufacturing firms including managers and internal control and audit staff were drawn using a purposive sampling technique. Primary data on internal control indicators such as control environment, risk assessment, control activities, information and communication and monitoring and internal audit effectiveness indicators such as Internal Audit Relationships (IARe), Internal Audit Resources (IAR), Internal Audit Processes (IAP) and Organizational Characteristics (OCH) were collected using a closed-ended and structured questionnaire. An explanatory research design with a quantitative approach premised on a positivist paradigm was employed to address the objectives of the study. The study sought to address the following objectives:

1. To assess the general effectiveness of internal controls in Ghanaian-listed manufacturing firms.
2. To examine the effect of internal control systems on the performance of Ghanaian-listed manufacturing firms.
3. To assess the moderating role of internal audit effectiveness on the relationship between internal control systems and the performance of Ghanaian-listed manufacturing firms.

Descriptive statistics, including mean and standard deviations were used to assess the general effectiveness of the internal control systems of Ghanaian manufacturing firms (Objective 1). Objectives 2 and 3 were assessed using Partial Least Square-Structural Equation Modeling (PLS-SEM).

5.1 Summary of Key Findings

5.1.1 Effectiveness of internal controls in Ghanaian listed manufacturing firms

The findings indicate that Ghanaian-listed manufacturing firms have been efficacious in their internal control systems. This is because they have achieved a high level of efficiency as far as their control environment as characterized by adherence to high ethical standards and organizational policies is concerned. Relatedly, Ghanaian-listed manufacturing firms have also achieved high efficacy in their risk assessment, control activities (i.e., segregation of duties, checks and balances, etc), information and communication, and monitoring of control activities.

5.1.2 Effect of internal control systems on Ghanaian-listed manufacturing firms

It was further revealed that the internal control system of Ghanaian-manufacturing firms has a significant and positive effect on their financial and non-financial performance. This revelation is validated by the fact that the firms' commitment to making effective their control environment, risk assessment, control activities, information and communication and monitoring has had a significant influence on their financial and non-financial performance. This implies that any firm having weak internal control mechanisms has the tendency to experience declining performance.

5.1.3 The moderating role of internal audit effectiveness on the effect of internal control systems on Ghanaian-listed manufacturing firms' performance

It was finally found that internal audit effectiveness plays a significant moderating role in the causal relationship between internal control systems and Ghanaian-listed manufacturing firms' performance, implying that for the firms to achieve high performance, there is the need for the existence of properly constituted and well-resourced audit department to help strengthen the internal control system.

5.2 Conclusions

5.2.1 General effectiveness of internal controls of Ghanaian-listed manufacturing firms

Based on the findings, it can be concluded that Ghanaian-listed manufacturing firms have been efficacious in handling their internal controls as reflected in their

efficiently managed control activities, risk assessment, control activities, information and communication and monitoring. It can thus be concluded that most of the manufacturing firms have upheld high levels of ethical standards and good corporate values, instituted clear lines of authority and responsibility, and provided mentoring and training opportunities for their employees especially those in the internal control sections. It can also be concluded that the management of Ghanaian-listed manufacturing firms leave no stone unturned in ensuring that risks are identified and provisions made, properly functioning accounting and financial information systems are in place, safety and integrity of documents and properties are guaranteed and monitoring of control activities are effective.

5.2.2 Effect of internal control systems on the performance of Ghanaian-listed manufacturing firms

It can further be concluded that the existence of a well-functioning internal control system of Ghanaian manufacturing firms has a high tendency of improving their financial and non-financial performances. Thus, management' commitment to ensuring properly functioning and well-resourced internal control departments including quality control department of the firms is a sine qua non in ensuring a robust internal control mechanism. Hence, management strategic direction is a driving force in the functioning of the internal control systems in these organizations.

5.2.3 The moderating role of internal audit effectiveness in the relationship between internal control systems and the performance of Ghanaian-listed manufacturing firms

It can again be concluded that giving a great deal of supremacy to internal audit will help strengthen the internal control systems of the firms; an indication that enhancing internal controls without a properly functioning internal audit is an effort in futility. Thus, for the firms to see the true reflection of the internal controls in their performance, there is a need to pay more attention to resourcing and training of the internal audit staff.

5.3 Recommendations

Two suggestions have been made in light of the observations and conclusions reached in the preceding sections: recommendations for action and recommendations for further research, as presented below.

5.3.1 Recommendation for action

5.3.1.1 General effectiveness of internal control systems of Ghanaian-listed manufacturing firms

Despite the encouraging performance put up by the manufacturing sector of Ghana as far as its internal controls are concerned, it is important to note that achieving the objective of becoming the manufacturing hub in Sub-Saharan Africa is a long-term endeavour that requires consistency and a lot of commitment. It is, therefore, recommended that the culture of regular assessment of progress on internal control strategies be upheld and adjusting them to adapt to changing economic, technological, and market conditions.

5.3.1.2 Effect of internal control systems on the performance of Ghanaian-listed manufacturing firms

Gathering from the foregoing revelations, it is therefore recommended that management of Ghanaian manufacturing firms and other organizations should ensure strong internal control systems. This will help reduce wastages, ensure the safety and integrity of properties including vital documents, ensure efficient utilization of resources, proper coordination of activities, instil a sense of responsibility in employees, proper risk management, reduce agency problems and enhance general effectiveness and efficiency in the manufacturing industry.

5.3.1.3 The moderating role of internal audit effectiveness in the relationship between internal control systems and the performance of Ghanaian-listed manufacturing firms

Having observed the potency of internal audit effectiveness in interacting with internal control systems to influence performance, it is recommended to the manufacturing sector and all related stakeholders to ensure that their internal audit departments are well resourced and empowered and adherence to international best practices should be of top priority. This will help catalyse the realization of the sector's aim of becoming the subregion's manufacturing hub.

5.3.2 Suggestions for Further Research

Further studies could be conducted on the moderating role of management actions on the relationship between internal control systems and firms' performance. This is necessary because internal control structures may be put in place but management may use its position to frustrate the system by being non-adherent to the laid down

control mechanisms. Further studies could also be conducted using a qualitative approach, preferably, interviews and focus group discussions to explore the various challenges facing the internal control departments of Ghanaian manufacturing firms and possible remedies to those challenges which will offer a new perspective of ways of ensuring a robust internal control systems in these firms.



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