INTERNATIONAL REVIEW OF FINANCIAL STUDIES | IROFS
Vol 1, Issue 2;December, 2024 / visit: https://journals.unizik.edu.ng/irofs

AUDIT COMMITTEE CHARACTERISTICS AND THE PROFITABILITY OF LISTED INDUSTRIAL GOODS FIRMS IN NIGERIA

Ifeyinwa Caroline Ozoemene[1] Innocent Chukwuebuka Nnubia[2]
[1&2]*Department of Accountancy, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria.*
Email: ifyokey1@gmail.com[1] ic.nnubia@unizik.edu.ng [2]

***All correspondence to**:* ifyokey1@gmail.com

ABSTRACT
The study examined the effect of audit committee characteristics on the profitability of listed industrial goods firms in Nigeria. Specifically, the study determined the effect of audit committee size, audit committee gender diversity, audit committee independence and audit committee diligence on the return on capital employed of listed industrial goods firms in Nigeria. Ex-post facto research design was employed. Thirteen (13) listed industrial goods companies on the Nigerian Exchange Group made up the population of the study. Purposive sampling was used in selecting a sample size of nine (9) firms. Secondary data for the study were collected from the firms' annual reports over a ten year period which spanned from 2014 to 2023. Descriptive tools such as mean and measures of dispersion were used to summarise the data. Panel Least Square regressions with white cross-section standard errors was used to test the hypotheses. The findings revealed the following: Audit Committee Size has a positive and significant effect the return on capital employed of listed industrial goods firms in Nigeria (β = 0.053675; p-value = 0.0001); Audit Committee Gender Diversity (ACGD) has a positive but non-significant effect on the return on capital employed of listed industrial goods firms in Nigeria (β = 0.139434; p-value = 0.1739); Audit Committee Independence (ACI) has a positive but non-significant effect on the return on capital employed of listed industrial goods firms in Nigeria (β = 0.706078; p-value = 0.2731); Audit Committee Diligence (ACD) has a positive and significant effect on the return on capital employed of listed industrial goods firms in Nigeria (β = 0.196620; p-value = 0.0112). In conclusion, larger, more gender-diverse, independent, and diligent audit committees are associated with better profitability outcomes. The study recommends that the board should consider expanding the audit committee by adding at least one or two members with specialized financial expertise or industry knowledge in order to enhance the committee's ability to provide more thorough oversight of financial reporting, improve risk management, and, ultimately, contribute to better financial performance.

Key words: *Audit Committee Characteristics, Audit Committee Diligence, Audit Committee Gender Diversity, Audit Committee Independence, Audit Committee Size, Profitability,*

CITE AS: Ozoemene, I.C. & Nnubia, I.C. (2024). Audit committee characteristics and the profitability of listed industrial goods firms in Nigeria, *International Review of Financial Studies*, 1(2), 143 - 179. Available: https://journals.unizik.edu.ng/irofs

1. INTRODUCTION

The effectiveness of corporate governance mechanisms has long been recognized as a crucial factor in shaping the overall performance and financial outcomes of firms (Almarayeh, Tahtamouni, Al-Hamadeen, Alaodat & Alsoboa, 2023; Kurawa & Shuaibu, 2022). Among

the various components of corporate governance structures, audit committees have emerged as particularly significant, as they are entrusted with the important task of overseeing financial reporting, risk management (Ojeka, Adeboye & Dahunsi, 2021), and internal control processes within organizations (Bepari, 2023). Audit committees are specialized committees typically composed of independent directors who possess the necessary financial expertise and knowledge to fulfill their oversight responsibilities effectively (Fariha, Hossain & Ghosh, 2022; Okeke, 2021). They serve as a bridge between the management of a company and its external auditors, ensuring that financial statements are prepared accurately and transparently. By maintaining a vigilant eye on financial reporting practices, these committees help maintain the integrity and reliability of financial information, which is crucial for informed decision-making by stakeholders (Al-ahdal & Hashim, 2022).

The characteristics of audit committees have garnered considerable attention in research due to their potential influence on the quality of financial reporting and, consequently, on firm profitability (Al-Jalahma, 2022). Several key characteristics are often examined, including the composition of the committee, the expertise and independence of its members, the frequency and depth of their meetings, and the extent of their interaction with auditors and senior management (Gbenyi, Tsegba & Duenya, 2023). Independence ensures that these members can objectively evaluate financial statements and the overall control environment without being influenced by management or other conflicting interests (Leng, 2023). Independent audit committees provide a valuable check and balance function, reducing the likelihood of fraudulent activities or biased reporting. Also, their financial literacy enables them to comprehend complex financial statements, evaluate the appropriateness of accounting policies, and understand the potential impact of accounting choices on reported financial results. The presence of individuals with financial expertise enhances the committee's ability to challenge management on financial matters, leading to more reliable financial reporting (Al-Jalahma, 2022).

The frequency and depth of audit committee meetings are also significant factors (Shamsuddin & Alshahri, 2022). Regular meetings allow committee members to stay up-to-date with organizational activities and address emerging risks or issues promptly (Aryan, 2015). Furthermore, in-depth discussions during these meetings facilitate a comprehensive understanding of financial reporting practices and risk management processes, leading to more effective oversight (Ofor, Orjinta & Mayah, 2022). In Nigeria's emerging economy, particularly within the crucial industrial goods sector, the effectiveness of audit committees

is increasingly recognized as vital for firm performance. Audit committees, responsible for overseeing financial reporting and safeguarding stakeholder interests, can significantly impact profitability through their size, gender diversity, independence, and diligence. Larger committees may offer more expertise but face coordination challenges, while gender diversity could enhance decision-making. Independent committees might ensure more accurate reporting, and diligent committees could improve oversight. This study investigates how these audit committee characteristics influence the return on capital employed (ROCE) in Nigerian industrial firms, aiming to shed light on best practices for enhancing financial performance and governance. By possessing these desired characteristics and fulfilling their responsibilities diligently, audit committees contribute to the improvement of financial reporting quality. Enhanced financial reporting quality instills confidence in the reliability and accuracy of the information provided to stakeholders, such as investors, creditors, and regulatory authorities. This, in turn, can lead to increased investor trust, reduced information asymmetry, and potentially lower capital costs for the company and improved profitability (Alodat, Al Amosh, Khatib & Mansour, 2023; Okeke, 2021).

Firm profitability is a key performance indicator that reflects their ability to generate sustainable earnings and deliver returns to shareholders (Bappah, Saleh & Hassan, 2022). It is an important gauge of their operational efficiency, cost management, market positioning, and ability to adapt to changing market dynamics. Profitable firms are more likely to attract investment, expand their operations, and contribute to economic growth. The effectiveness of audit and also of audit committees is crucial for ensuring transparent financial reporting, sound risk management, and strong corporate governance practices (Nworie & Obi, 2024). The ideal characteristics of an effective audit committee would include an appropriate size, ensuring an adequate representation of diverse expertise and experience. The audit committees would also demonstrate a high level of independence, free from any conflicts of interest and capable of exercising unbiased judgment in their oversight responsibilities. Moreover, gender diversity within audit committees would be encouraged to promote a broad range of perspectives and hints. Lastly, audit committees would demonstrate diligence in their review of financial statements, internal controls, and risk management processes, ensuring accurate reporting and effective risk mitigation (Alodat, Al Amosh, Khatib & Mansour, 2023). However, the actual situation in some companies reveals potential deficiencies in audit committee characteristics (Micah, Oyedokun & Gimba, 2020). The composition of audit committees do not always reflect the desired expertise, as the members might lack the necessary financial, accounting, or industry-specific knowledge. The independence of audit

committees is often compromised due to close relationships between committee members and company management, raising concerns about their ability to provide unbiased oversight (Leng, 2023). Furthermore, gender diversity within audit committees is often lacking, leading to limited perspectives and potential blind spots (Al-Jalahma, 2022). The diligence of audit committees in fulfilling their oversight responsibilities sometimes varies, with some committees potentially not dedicating sufficient time and attention to reviewing financial statements and internal controls (Shamsuddin & Alshahri, 2022).

The consequences of these anomalies are significant. Inadequate audit committee characteristics can undermine the quality of financial reporting, potentially leading to misrepresentation of financial results and increased financial risks (Al-ahdal & Hashim, 2022; Aldamen, Duncan, Kelly, McNamara & Nagel, 2012). Poor corporate governance practices, resulting from deficient audit committee characteristics, can erode investor confidence (Bepari, 2023), leading to reduced investments and lower market valuations for listed industrial goods companies. Moreover, without effective oversight, there is an increased risk of fraud, non-compliance with regulations, and improper risk management practices (Dim & Onuora, 2022). Ultimately, these consequences can adversely impact the profitability and sustainability of listed industrial goods companies, hindering their growth and competitiveness in the market.. Numerous related studies conducted by various researchers, including Babatunde, Ikubor, and Udobi-Owoloja (2022), Nduviri (2022), De Silva and Hewage (2022), Fariha, Hossain, and Ghosh (2022), Al-ahdal and Hashim (2022), Al-Jalahma (2022), Asaolu, Olowookere, Adebayo, and Kareem (2022), Shamsuddin and Alshahri (2022), Dim and Onuora (2022), Ehiedu and Toria (2022), Kurawa and Shuaibu (2022), Hassan (2022), Wobo and Ofurum (2021), Okeke (2021), Bendigeri (2021), Eseoghene and Oghenevwogaga (2021), Kabito (2021), Mili and Hashim (2021), Omotoye, Adeyemo, Omotoye, Okeme, and Leigh (2021), Ojeka, Adeboye, and Dahunsi (2021), Osevwe-Okoroyibo and Emeka-Nwokeji (2021), and Adebowale (2020), have explored various aspects of audit committee characteristics and their impact on firm performance. Notably, except for Wobo and Ofurum's study in 2021, no known research has employed return on capital employed as a measure of firm profitability. Consequently, there exists a research gap regarding how audit committee attributes influence return on capital employed, particularly within the industrial goods sector in Nigeria. Hence, the present study aims to address the above gap in literature.

1.1 Objectives

The broad objective of the study is to determine the effect of audit committee characteristics on the profitability of listed industrial goods firms in Nigeria. The specific objectives are to:

1. ascertain the effect of audit committee size on the return on capital employed of listed industrial goods firms in Nigeria.
2. ascertain the extent to which audit committee gender diversity affects the return on capital employed of listed industrial goods firms in Nigeria.
3. investigate the effect of audit committee independence on the return on capital employed of listed industrial goods firms in Nigeria.
4. examine the effect of audit committee diligence on the return on capital employed of listed industrial goods firms in Nigeria.

1.2 Hypotheses

H_{01}: Audit committee size has no significant effect on the return on capital employed of listed industrial goods firms in Nigeria.

H_{02}: Audit committee gender diversity does not significantly affect the return on capital employed of listed industrial goods firms in Nigeria.

H_{03}: Audit committee independence has no significant effect on the return on capital employed of listed industrial goods firms in Nigeria.

H_{04}: Audit committee diligence has no significant effect on the return on capital employed of listed industrial goods firms in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Audit Committee Characteristics

Eseoghene and Oghenevwogaga (2021) defined audit committee characteristics as a set of attributes and qualities that define the composition, structure, and operational dynamics of an organization's audit committee. These are the defining features that pertain to how an audit committee is structured and operates, encompassing elements such as its member qualifications, independence levels, and communication practices with auditors (Asaolu, Olowookere, Adebayo & Kareem, 2022; Bendigeri 2021). Audit committee characteristics typically include the independence of committee members, their qualifications, expertise, diversity, and their ability to maintain an objective stance in fulfilling their responsibilities (Babatunde, Ikubor & Udobi-Owoloja, 2022).

An essential aspect of these characteristics is the independence of committee members, ensuring they are free from any conflicts of interest that could compromise their ability to provide impartial oversight (Alabdullah & Ahmed, 2020). Additionally, diversity within the audit committee, encompassing a range of backgrounds, perspectives, and experiences, can enhance the depth and quality of discussions, leading to more comprehensive and well-informed decision-making (Aryan, 2015). Furthermore, Fariha, Hossain and Ghosh (2022) submitted that audit committee characteristics involve factors such as the committee's size, frequency of meetings, the inclusion of financial experts, and its communication with internal and external auditors. The size of the committee should strike a balance between ensuring an adequate number of members to cover various aspects of oversight and preventing it from becoming unwieldy and inefficient (De Silva & Hewage, 2022). Regular meetings and effective communication channels with auditors foster collaboration and the exchange of critical information, enhancing the committee's ability to identify and address financial and compliance issues promptly (Dim & Onuora, 2022). Moreover, the inclusion of financial experts among committee members can provide valuable perspectives into complex accounting matters, strengthening the committee's capacity to fulfill its responsibilities effectively (Kabito, 2021). Therefore, audit committee characteristics encompass the structural elements and features that define how the committee functions, serving as a critical component of corporate governance and stakeholder protection (Adebowale, 2020). According to Gbenyi, Tsegba and Duenya (2023), these attributes collectively shape the effectiveness and credibility of the audit committee in overseeing financial reporting, internal controls, risk management, and compliance with regulatory requirements, ultimately contributing to sound corporate governance and stakeholder protection.

2.1.1.1 Audit Committee Size

Audit Committee Size refers to the number of members on a company's audit committee (Bendigeri 2021). It refers to the total count of individuals serving on the committee. In Companies and Allied Matters Act (CAMA) 2020, the audit committee of a public company should have five (5) members that is, three (3) shareholders and two (2) non-executive directors with at least one member being a member of a professional accounting body in Nigeria established by an Act of the National Assembly. However, the size can vary widely, and it's important to strike a balance. Too few members may result in a lack of expertise or oversight, while too many members may hinder decision-making efficiency (Aryan, 2015). Audit Committee Size is a critical aspect of corporate governance that pertains to the number of individuals comprising a company's audit committee (Ahmed & Ahmed, 2022). This

component plays a pivotal role in shaping the committee's effectiveness and its ability to fulfill its core responsibilities (Alabdullah & Ahmed, 2020). The optimal size of an audit committee is not a one-size-fits-all concept, as it can fluctuate significantly based on the unique characteristics and needs of each organization.

The composition of an audit committee typically comprises individuals who are not involved in the day-to-day operations of the company, which fosters independence and objectivity (Dim & Onuora, 2022). However, determining the ideal number of members can be a complex decision, necessitating careful consideration of various factors (Fariha, Hossain & Ghosh, 2022). On one end of the spectrum, having too few members on an audit committee can pose significant challenges. These committees are entrusted with the critical task of overseeing financial reporting, internal controls, and compliance with regulations (Aldamen, Duncan, Kelly, McNamara & Nagel, 2012). A limited number of members may result in a scarcity of diverse skills and expertise, potentially undermining the committee's ability to effectively scrutinize financial statements and assess the adequacy of internal controls (De Silva & Hewage, 2022). Moreover, it can be challenging for a small group to manage the workload associated with these responsibilities, potentially leading to oversight gaps.

Conversely, an excessively large audit committee may encounter its own set of issues (Adebowale, 2020). A bloated committee can become unwieldy and less efficient in decision-making (Aryan, 2015). To strike the right balance, organizations ought to consider their specific circumstances, including their size, complexity, and industry. The aim is to assemble a committee with an adequate number of members possessing a diverse set of skills and experiences relevant to financial oversight (Asaolu, Olowookere, Adebayo & Kareem, 2022). This diversity can help ensure that the committee can effectively evaluate financial statements, assess the risk environment, and engage in constructive dialogues with internal and external auditors. In addition to the quantity of members, it is crucial to emphasize the quality of members. Beyond numbers, the expertise, independence, and commitment of audit committee members are fundamental (Leng, 2023). Having individuals with financial acumen, industry knowledge, and a strong commitment to the organization's integrity and compliance can significantly enhance the committee's effectiveness (Dim & Onuora, 2022).

2.1.1.2 Audit Committee Independence

Audit Committee Independence refers to the degree to which members of an audit committee are free from any conflicts of interest and maintain an objective stance in fulfilling their responsibilities (Leng, 2023). Audit Committee Independence is a fundamental pillar of corporate governance, representing the proportion of independent directors in the audit committee (Ahmed & Ahmed, 2022). In modern business, where transparency, accountability, and the safeguarding of stakeholders' interests are paramount, audit committee independence stands as a hub in ensuring the integrity of financial reporting, risk management, and compliance with legal and regulatory frameworks. The concept of independence extends far beyond a mere formality. It is the bedrock upon which the audit committee's credibility and effectiveness rest (Fariha, Hossain & Ghosh, 2022). Independence means that the members of the committee are not entangled in relationships or financial interests that could compromise their ability to make impartial judgments or act in the best interests of the company and its stakeholders (Alabdullah & Ahmed, 2020).

Audit committee independence houses the notion that committee members must remain free from undue influence, coercion, or bias (Mili & Hashim, 2021). They must be able to scrutinize financial statements, internal controls, and audit processes with an unclouded perspective, unswayed by personal or professional affiliations. This impartiality is crucial in ensuring that financial reporting is accurate and transparent, that internal controls are robust, and that the audit process is rigorous and objective. Independence is often enshrined in corporate governance codes, regulations, and standards worldwide. These standards typically outline criteria for determining the independence of audit committee members, such as restrictions on financial relationships with the company, its executives, or major shareholders. Additionally, audit committee members are often required to disclose any potential conflicts of interest promptly and recuse themselves from discussions or decisions where such conflicts exist.

The benefits of audit committee independence are manifold. First and foremost, it bolsters the credibility of financial reporting. Investors, regulators, and other stakeholders can have greater confidence in the accuracy and transparency of financial statements when they know that an independent committee has rigorously reviewed them. Secondly, independence enhances risk management. An independent audit committee is better positioned to identify and assess risks accurately, especially those that might otherwise be concealed or downplayed

(Asaolu, Olowookere, Adebayo & Kareem, 2022). This proactive risk management approach can protect the company from unexpected crises and reputational damage.

2.1.1.3 Audit Committee Gender Diversity

Audit Committee Gender Diversity refers to the composition of a company's audit committee with regard to the proportion of female members. This dimension of diversity has gained increasing recognition and importance in the corporate world, as organizations seek to foster inclusive and effective governance structures. The concept of gender diversity in the context of an audit committee transcends mere numerical representation. It embodies the notion that diverse backgrounds, perspectives, and experiences contribute to more comprehensive and effective decision-making processes (Ahmed & Ahmed, 2022).

Gender diversity in the audit committee adds a layer of diversity that extends beyond traditional financial and industry expertise. Women may bring different viewpoints, hints, and approaches to the table. This diversity of thought can lead to more robust discussions and more well-rounded decision-making (Babatunde, Ikubor & Udobi-Owoloja, 2022). Moreover, a diverse group of individuals is often better equipped to address complex issues. When audit committees comprise members with varied backgrounds, including gender diversity, they are better prepared to navigate intricate financial and governance challenges. Different perspectives can lead to innovative solutions and more effective problem-solving. Furthermore, gender diversity can help mitigate the detrimental effects of groupthink—a phenomenon where a group of people conform to a prevailing viewpoint. Gender diversity introduces alternative viewpoints (Dim & Onuora, 2022) and encourages healthy debate within the committee. This can lead to more thoughtful and well-informed decisions.

In essence, gender diversity in the audit committee is not just a matter of representation; it's about harnessing the power of diversity to enhance the quality of governance, risk management, and decision-making within an organization. By fostering an inclusive environment where all voices are heard and respected, companies can position themselves for long-term success and adaptability.

2.1.1.4 Audit Committee Diligence

Audit committee diligence refers to the level of thoroughness, care, and attentiveness exhibited by the audit committee in carrying out its duties, such as reviewing financial statements, internal controls, and risk management processes (Raghunandan & Rama, 2007). Audit committee diligence primarily ensures the efficacy of the audit committee's oversight

role. It conveys the unwavering commitment of committee members to exercise a high degree of scrutiny and care in their tasks (Ahmed & Ahmed, 2022; Fariha, Hossain & Ghosh, 2022). These tasks encompass an array of responsibilities, with a primary focus on reviewing financial statements, assessing internal controls, and evaluating risk management processes (Babatunde, Ikubor & Udobi-Owoloja, 2022; Alabdullah & Ahmed, 2020). The level of diligence applied to these functions is instrumental in safeguarding the interests of stakeholders, upholding financial transparency, and ensuring compliance with regulatory requirements (De Silva & Hewage, 2022).

One of the central facets of audit committee diligence lies in the meticulous examination of financial statements. Diligent committee members scrutinize these statements with a critical eye, probing for accuracy, completeness, and adherence to accounting standards. They seek to identify potential errors, omissions, or irregularities that could compromise the integrity of financial reporting. This meticulous review is pivotal in providing stakeholders, including investors and regulators, with reliable and transparent financial information upon which they can base their decisions. Additionally, audit committee diligence extends to the assessment of internal controls. Diligent committee members delve into the company's systems and procedures designed to safeguard assets, ensure accuracy in financial reporting, and prevent fraud (Raghunandan & Rama, 2007). They assess the robustness of these controls, identifying weaknesses or vulnerabilities that may necessitate remediation. A diligent approach to internal control evaluation is indispensable in safeguarding the company against financial mismanagement and fraudulent activities.

Therefore, audit Committee Diligence is an indispensable element of corporate governance, epitomizing the meticulous and conscientious approach of committee members in fulfilling their responsibilities (Barua, Rama & Sharma, 2010). This diligence extends to the comprehensive review of financial statements, the assessment of internal controls, and the evaluation of risk management processes. By upholding the principles of diligence, organizations can demonstrate their commitment to prudent stewardship, stakeholder protection, and the preservation of financial integrity.

2.1.2 Firm Profitability

Firm Profitability refers to the measure of the financial health and success of a company in its ability to generate profits (Sudrajat & Setiyawati, 2021). This concept serves as a vital yardstick for evaluating the effectiveness of a firm's operations, strategies, and overall financial performance. It reflects the extent to which a company can efficiently convert its

resources, investments, and efforts into a surplus of revenue over expenses (Babalola, 2013). Firm profitability signifies the company's capacity to not only cover its operational costs and expenses but also to produce an excess, commonly referred to as net profit or earnings (Aryan, 2015). This surplus plays a pivotal role in sustaining and expanding the business, as it can be reinvested for growth, distributed to shareholders as dividends, or used to repay debts (De Silva & Hewage, 2022).

For stakeholders such as investors, creditors, and management, firm profitability serves as a critical barometer of the company's financial strength and viability. It influences investment decisions, creditworthiness assessments, and strategic planning. A consistently profitable firm is often perceived as well-managed, competitive, and capable of weathering economic challenges (Nworie & Aniefuna, 2024; Moedu, Amahalu & Nworie, 2023). Furthermore, profitability is not solely a short-term financial consideration; it also has long-term implications for the firm's sustainability and growth prospects. Sustainable profitability ensures the company's ability to reinvest in research and development, expand market reach, and remain resilient in the face of market fluctuations or industry disruptions.

2.1.2.1 Return on Capital Employed

Return on Capital Employed measures the profitability of a company by calculating the percentage of profits generated relative to the capital invested (Lisek, Luty & Zioło, 2020). ROCE is a vital financial metric used to assess the profitability and efficiency of a company in generating returns from the capital invested in its operations (Steyn, 2012). This metric provides a comprehensive picture of how effectively a company utilizes both its equity and debt capital to generate profits.

ROCE provides a direct measure of how efficiently a company generates profits from its invested capital. A higher ROCE indicates more efficient use of capital, while a lower ROCE suggests inefficiency in capital deployment. Investors and shareholders often use ROCE as a key criterion for evaluating the attractiveness of investing in a particular company. A high ROCE may signal an attractive investment opportunity (Steyn, 2012). A company with a consistently high ROCE may be better equipped to weather economic downturns or financial challenges. It demonstrates the ability to cover capital costs and generate a surplus (Lisek, Luty & Zioło, 2020). ROCE influences strategic decisions regarding capital allocation. Companies with a strong ROCE may choose to reinvest in their business for growth, pay down debt, distribute dividends to shareholders, or repurchase shares.

2.2 Theoretical Review

2.2.1 Agency Theory

Agency theory originated from the work of Michael C. Jensen and William H. Meckling in their 1976 paper "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure." Agency theory emerged as a response to the separation of ownership and control in modern corporations. Jensen and Meckling recognized that in publicly traded companies, shareholders (the principals) entrust professional managers (the agents) with decision-making authority to run the business. However, this separation of ownership and control can lead to a misalignment of interests between shareholders and managers, as managers may prioritize their own interests over those of shareholders (Asaolu, Olowookere, Adebayo & Kareem, 2022).

Agency theory postulates that conflicts of interest and information asymmetry between principals (shareholders) and agents (managers) can result in agency costs, which are the expenses incurred in monitoring and mitigating these conflicts (Adebowale, 2020). To align the interests of principals and agents, various mechanisms are put in place, including the appointment of boards and committees, such as audit committees, to oversee management and protect shareholder interests (Babatunde, Ikubor & Udobi-Owoloja, 2022). Agency theory supports the argument that a larger audit committee may positively impact profitability. A larger committee can enhance oversight by providing a greater pool of expertise to monitor managerial decisions (Dim & Onuora, 2022). This aligns with the agency theory's premise that effective monitoring mechanisms can mitigate agency costs and enhance the alignment of interests between shareholders and managers (Ehiedu & Toria, 2022). Agency theory aligns with the argument that gender diversity within the audit committee can influence profitability. Diversity can introduce different perspectives and reduce the potential for groupthink, which is a concern in agency theory. Diverse committees may be more effective in challenging management's decisions, ultimately contributing to improved financial performance.

Agency theory strongly supports the argument that audit committee independence positively correlates with profitability. An independent committee is better positioned to act in the interests of shareholders by providing objective oversight and reducing the potential for conflicts of interest with management (Eseoghene & Oghenevwogaga, 2021). This aligns with agency theory's focus on minimizing agency costs through effective monitoring. Agency theory underscores the importance of diligence in the audit committee's role. A diligent

committee is more likely to detect and address agency problems and financial irregularities promptly. By proactively managing risks and ensuring financial transparency, a diligent committee can help reduce agency costs and contribute to improved profitability. Therefore, agency theory provides a theoretical foundation for understanding the roles and functions of audit committees in mitigating agency problems within organizations. It supports the argument that audit committee characteristics, such as size, gender diversity, independence, and diligence, can influence the profitability of listed industrial goods firms in Nigeria by reducing agency costs, enhancing oversight, and aligning the interests of shareholders and managers.

2.3 Empirical Review

Babatunde, Ikubor, and Udobi-Owoloja (2022) investigated the impact of audit committee attributes on firm performance within the Nigerian context. Employing a cross-sectional survey design, the research encompassed a sample of fifty-one (51) listed companies on the Nigerian Exchange Group. The study's findings using linear regression analysis revealed that audit committee gender diversity, audit committee competence and audit committee efficiency has no significant effect on firm performance at the 0.05 level of significance.

Nduviri (2022) explored the effect of audit committee characteristics on the financial performance of manufacturing firms listed on the Nairobi Securities Exchange. This research combined both descriptive and longitudinal research designs, encompassing all 17 manufacturing firms across multiple sectors of the exchange. Employing a census approach due to the relatively small target population, the study collected secondary data from published financial statements. The study applied a pooled ordinary least squares regression applied to 127 firm years of observations. The study's outcomes demonstrated that audit committee size, expertise, and independence exhibited positive and statistically significant associations with financial performance, while audit committee meetings revealed a negative yet statistically significant impact. Audit committee gender diversity was found to have no statistically significant association with financial performance.

De Silva and Hewage (2022) investigated the impact of audit committee characteristics (AC), namely AC size, AC meeting frequency, and AC expertise on the financial performance of banks in Sri Lanka. The study was carried out using secondary data obtained through published annual reports of 24 banks, including 96 observations in the Colombo Stock Exchange (CSE) from 2016 to 2019. The findings of the regression analysis demonstrated

audit committee size and audit committee meeting frequency do not affect ROA and ROE. However, audit committee expertise has a significant positive relationship with ROE while insignificantly related with ROA.

Fariha, Hossain and Ghosh (2022) analyzed the effect of audit committee attributes on the firm performance of publicly listed commercial banks of Bangladesh. Thirty publicly listed commercial banks of Dhaka Stock Exchange (DSE) have been taken as sample for this study. Data have been collected from annual reports between 2011 and 2017 of the assessed banks. Pooled OLS model has been used for running regression model of this study. The findings showed that Audit Committee Size has a negative and significant relationship with Tobin's' *Q*; Independence of audit committee chairman has a negative and significant relationship with Tobin's *Q* and Stock Returns; and number of audit meetings have no significant relationship with firm performance.

Al-ahdal and Hashim (2022) analysed the influence of audit committee characteristics on the performance of non-financial public limited companies listed on the National Stock Exchange 100. One-way random effect panel data regression was applied to 74 non-financial firms in the Nifty 100 from 2014 until 2019. The overall audit committee index was built based on the new Indian Companies Act, 2013. The outcome of the study revealed that there is lack of evidence to show that audit committee characteristics improve the performance of top Indian non-financial listed firms.

Al-Jalahma (2022) analyzed the relationship between audit committee attributes and company performance in Bahrain. This paper investigated the impact of audit committee independence, size, and meeting frequency on company performance (employing ROE, ROA, and Tobin's Q). Data from all 14 non-financial publicly listed companies on Bahrain Bourse during 2005–2019 were used. The results of the regression analysis revealed that audit committee independence has a negative effect on firm performance and audit committee meetings does not affect company performance.

Asaolu, Olowookere, Adebayo and Kareem (2022) investigated the influence of audit committee characteristics on the sustainable growth rate of non-financial firms in Nigeria. The study population was listed as manufacturing companies on the Nigerian Stock Exchange (NSE). A sample size of 60 manufacturing firms was selected using a purposive sampling technique and content analysis, covering ten financial years (2011 to 2020). The results of the

regression analysis showed that audit committee size, audit committee independence and audit committee financial expertise were positively and significantly associated with sustainable growth rate.

Shamsuddin and Alshahri (2022) examined the effect of audit committee characteristics on the financial performance of non-financial firms in Oman. The study was conducted on 63 non-financial firms listed on the Muscat Securities Market (MSM) in Oman for the period from 2016 to 2019. Multiple regression techniques was applied to analyze the data and get empirical results. The findings revealed that audit committee size and audit committee meeting have insignificant negative effect on return on asset, whereas audit committee independence has a non-significant positive effect on return on asset.

Dim and Onuora (2022) examined the impact of audit committee attributes on the value of firms in Nigeria. Their research encompassed a sample of 37 financial companies, encompassing both banking and non-banking entities, all of which were publicly listed on the Nigerian stock exchange. To analyze the collected data, the researchers employed the Dynamic Panel Generalized Method of Moment (GMM). The study's findings revealed that audit committee size had a notably positive and significant influence on both TobinQ and EVA as measures of firm performance; audit committee independence has a positive and significant effect on TobinQ but a negative and significant effect on EVA; audit committee gender diversity has significant impacts on both performance measures, with a positive relationship with TobinQ and a negative relationship with EVA.

Ehiedu and Toria (2022) investigated the effect of audit committee attributes on the financial performance of manufacturing firms in Nigeria during the period 2003-2020 (18 years). The researcher used three firms Unilever Nigeria Plc., Beta Glass Plc. and Meyer Plc. The dependent variable was measured with earnings per share (EPS), while the independent variables were measured with Audit Committee size and audit committee financial expertise. The estimation technique was Ordinary least square (OLS), normality, serial correlation, and heteroskedasticity test was carried out with the aid of E-views 9 statistical package. The study found that audit committee size and audit committee financial expertise have a significant impact on earnings per share of Unilever Nigeria Plc as the p-value t-statistics is below 5% significant level.

Kurawa and Shuaibu (2022) examined the impact of audit committee characteristics on financial performance of listed non-financial companies in Nigeria from 2013-2020. A sample of seventy-six (76) companies listed as non-financial was drawn from the population of one hundred and thirteen (113) companies. Audited annual reports and accounts were used for data extraction. The analysis was done using descriptive statistics and multiple regressions. Variables used include AC proxy by independence, size and meeting as the proxies for independent variable and financial performances' accounting and market based measures proxy by EPS and Tobin's Q was used as the dependent variable. Robustness tests such as multicollinearity test, heteroscedasticity test, normality test and Hausman specification test were conducted to validate the results. The study revealed that audit committee intendance negatively affects EPS; audit committee size has a significant positive relationship with EPS audit committee meeting has a positive significant relationship with EPS.

Hassan (2022) investigated the impact of audit committee attributes on the financial performance of Saudi non-financial firms. The research sampled the data of 100 companies spanning from 2010 to 2019 obtained from the firms' financial statements. The data generated were analysed using different panel data techniques (pooled OLS, fixed and random effects). This study found that audit committee size and meetings negatively influence firms' performance. However, audit committee independence and financial expertise indicate a strong and positive relationship with financial performance.

Wobo and Ofurum (2021) delved into the impact of audit committee attributes on the financial performance of listed Deposit Money Banks (DMBs) in Nigeria spanning the years 2009 to 2018. This exhaustive research spanned 10 years and encompassed thirteen (13) banks, resulting in a total of 130 firm-year observations. The primary independent variable under scrutiny was the audit committee's size, while the dependent variable was the financial performance of DMBs, specifically measured by return on capital employed (ROCE). The study adopted an ex-post facto research approach to address its research questions and data nature, with the panel fixed effect approach employed for analysis, utilizing E-views 9 for estimations. Intriguingly, the findings revealed that audit committee size, as well as the financial skill and frequency of audit committee meetings, did not significantly predict ROCE in the context of Nigerian DMBs.

Bendigeri (2021) examined the effect of audit committee attributes on the firm performance of CNX Ni fty listed firms in India. A sample of 45 companies covering 7 years data was

selected. Audit committee size, independent directors, women director, frequency of audit committee meeting, director qualification were selected as independent variables. Applying linear regression model, the study revealed that audit committee size exhibits a negative and insignificant relationship with return on asset; audit committee independence has a positive and significant relationship with return on asset, whereas audit committee meeting, qualification of audit committee director and firm leverage have a negative and significant impact on return on assets.

Eseoghene and Oghenevwogaga (2021) assessed whether audit committee characteristics drive financial performance of publicly quoted service firms in Nigeria. Audit committee characteristic was measured using audit committee size and independence, financial performance by return on equity and earnings per share, while control variable is natural logarithm of total assets. Data were obtained from the annual reports and accounts of sixteen (16) publicly quoted service firms during the period 2012-2019. Multivariate estimation technique was employed in the analysis of data and findings indicated that audit committee characteristics significantly and positively affect financial performance.

Kabito (2021) examined the influence of Audit Committee characteristics namely financial expertise and size on the profitability of listed companies at Dar es Salaam Stock Exchange (DSE). This was an explanatory study using survey design and was guided by the agency theory. Random sampling method was used to get 14 listed companies from the population of 28 listed companies at DSE. An unbalanced panel of annual quantitative secondary data from the selected companies covering eleven years from 2008 to 2018 was used. The Random Effects regression estimation model was used and the findings showed that audit committee financial expertise had positive but insignificant influence on the profitability (ROA) of listed companies at DSE, while audit committee size had a significant negative influence on ROA.

Mili and Hashim (2021) determined the effect of audit committee attributes on profitability of the listed pharmaceutical companies in Bangladesh. Applying purposive sampling method, the study used a sample of 5 (five) listed pharmaceutical companies on DSE of Bangladesh to perform the empirical investigation. The data has been assembled over a period of 4 (four) years, ie from 2015-16 to 2018-19, as of annual reports of the sample firms. In this study, audit committee size, along with audit committee independence have been used as the features of audit committee, and return on assets as the proxy to measure the profitability of the sample companies. Adopting multiple regression analysis technique on the collected data, the study

has observed that audit committee size has positive significant association with profitability, and audit committee independence has an insignificant positive association towards profitability of the sample firms.

Omotoye, Adeyemo, Omotoye, Okeme and Leigh (2021) assessed the association between audit committee attributes and the market performance of listed deposit money banks in Nigeria. The study specifically determined the influence of audit committee size, gender diversity, and expertise on market performance (measured by Tobin Q). Panel data was gathered from twelve (12) banks listed on the Nigerian Stock Exchange from 2013 to 2017. The study used fixed and random regression analysis. The results concluded that the association between audit committee size and Tobin Q was negatively significant. There was a positively significant impact of audit committee gender diversity and audit committee expertise on Tobin Q.

Ojeka, Adeboye and Dahunsi (2021) examined the relationship between audit committee characteristics and risk management of some selected listed firms in a developing country like Nigeria. The study used secondary data to describe the dependent variable (financial risk decomposed into credit risk and liquidity risk) and the explanatory variables (decomposed into audit committee accounting expertise, audit committee meetings, audit committee independence and audit committee gender). The study used pair sample t-test, student t-test, Pearson Moment Correlation and random panel data estimator for twenty (20) selected listed firms for 2012-2016. Findings indicate that there is a negative between audit committee accounting expertise and financial risk. This revealed that Accounting Expertise in Audit Committees are likely to involve in activities and practices to curb financial risk. In addition, the Audit committee meeting indicates a negative relationship with credit risk. Audit committee gender and audit committee independence have a negative effect on liquidity risk.

Osevwe-Okoroyibo and Emeka-Nwokeji (2021) examined the effect of audit committee attributes on performance of firms listed in the food and beverage industries in Nigeria Stock Exchange. Ex-post facto research design was adopted and secondary data were collected from annual reports of selected firms spanning eight years from 2011 to 2018. The population of this study constitute of all firms listed under the food and beverages sector in Nigeria stock exchange which are twenty-one (21) firms as at December 31st, 2018. The study purposively selected fourteen (14) firms based on the availability of their annual reports. Data were analysed using descriptive and inferential statistics. Descriptive statistics and regression

analysis were conducted. Analyses revealed that: audit committee independence and audit committee expertise have positive but insignificant effect on firm performance measured with EPS, while audit committee meeting exhibit positive and significant effect on EPS of listed food and beverages firms in Nigerian Stock Exchange (NSE).

Adebowale (2020) examined the relationship between audit committee characteristics and the performance of Deposit Money Banks (DMBs) in Nigeria during a six-year period from 2013 to 2018. Employing a correlative research design and a simple random sampling technique, the study used data from annual reports to measure audit committee characteristics, including Independence of Audit Committee Members, Size of Audit Committee Members, and Heterogeneity of Audit Committee Members. DMBs' performance was assessed using Return on Assets (ROA) as the dependent variable. The data underwent Linear Regression Analysis to test research hypotheses, with a significance level of 0.05. The study's findings indicated that Independence of Audit Committee Members, Size of Audit Committee Members, and Heterogeneity of Audit Committee Members have positive effect on the DMBs' performance.

Alabdullah and Ahmed (2020) investigated the impact of audit committees' attributes on corporate profitability of non-financial sector in Muscat Securities Market (MSM). This work analyzed cross sectional data for 60 non-financial firms. It used annual reports for the year of 2019 to analyze the impact of audit committees' features on corporate profitability. The study tested its hypotheses utilizing the Smart-PLS for data analysis. The findings revealed that audit committee size, audit Independence, and meeting of audit committee positively affect corporate profitability measured by ROA and ROE.

Aryan (2015) examined the relationship between audit committee characteristics, audit firm quality and companies' profitability in Jordan. This study used 69 industrial goods firms during the study period 2009-2014. Multiple regression were used to analyze the data; the result showed positive relationships between audit committee meeting, audit committee size and companies profitability, while no significant relationship between audit committee composition, audit committee members literacy, audit quality and companies profitability.

3. MATERIAL AND METHODS

This study employed an ex-post facto research design, which is utilized when the independent variables have already taking place, leaving the researcher with the sole ability to observe their consequences. *Ex-post facto* research design is a design used in investigating and

analyzing the effects or relationships between variables that have already occurred naturally or due to events that were beyond the control of the researcher (Harwell, 2011; Nworie, Okafor & John-Akamelu, 2022). In this particular investigation, both audit committee characteristics and profitability have already occurred in the past, and they are beyond the researcher's control for manipulation. Consequently, the researcher is limited to observing the link between these variables and making conclusions based on those observations. The study's population comprised all thirteen (13) industrial goods companies with shares traded on the Nigerian Exchange Group as of the closing market day on December 31st, 2023. The list of firms making up the study population is as follows:

Table 1 Population

1. Austin Laz & Company Plc.
2. Berger Paints Plc.
3. Beta Glass Plc.
4. Bua Cement Plc.
5. Cap Plc.
6. Cutix Plc.
7. Dangote Cement Plc.
8. Greif Nigeria Plc.
9. Lafarge Africa Plc.
10. Meyer Plc.
11. Notore Chemical Ind. Plc.
12. Premier Paints Plc.
13. Tripple Gee and Company Plc.

Source: Nigerian Exchange Group Daily Stock Listing (2023)

This study concentrates on the industrial goods firms listed in Nigeria, which amounted to a total of thirteen (13) firms. However, due to the unavailability of data for all the listed industrial goods firms on the internet and the Nigerian Exchange Group, only a subset of nine (9) firms was chosen for the research. Data for the analysis was sourced from the annual reports and financial statements of these selected industrial goods firms, covering the period from 2014 to 2023.

Table 2 Sample Size

1. Austin Laz & Company Plc.
2. Berger Paints Plc.
3. Beta Glass Plc.
4. Cap Plc.
5. Cutix Plc.
6. Dangote Cement Plc.
7. Lafarge Africa Plc.
8. Meyer Plc.
9. Tripple Gee and Company Plc.

Source: Researcher's Compilation (2023)

This research adopted a historical research framework, aligning with the study's intent to analyze historical events and gather historical data. Accordingly, the study relied on secondary data sourced from the annual financial reports of the ten selected industrial goods firms. These reports span a ten (10) year timeframe, from 2014 to 2023, and provide valuable historical data that can be scrutinized and applied to fulfill the study's objectives. In this study, the descriptive analysis encompassed several statistical measures, including the calculation of means, range values, standard deviation, and the assessment of Jarque-Bera probability values. These statistical tools were employed to provide a comprehensive overview and understanding of the dataset, shedding light on central tendencies, data dispersion, and the normality of the data distribution.

For the analysis of the formulated hypotheses, the study employed a sophisticated statistical technique known as the panel data regression technique. This approach is particularly well-suited for examining the relationships between variables over time and across different entities, making it highly relevant for this research. The software tool chosen for conducting these regression analyses was EVIEWS 11, a powerful and widely recognized statistical software package known for its capabilities in handling panel data and conducting rigorous econometric analyses. The utilization of this tool ensured that the study's hypotheses are rigorously tested and the results are accurately interpreted, contributing to the overall robustness of the research findings.

The functional form of the model used in the study is:

ROCE = f(ACS, ACGD, ACI, ACD……) ……Eqn 1.

Where:

ROCE = Return on Capital Employed

ACS = Audit committee Size

ACGD = Audit Committee Gender Diversity

ACI = Audit Committee Independence

ACD = Audit Committee Diligence

However, the study adopted and modified the linear model formulated by Babatunde, Ikubor and Udobi-Owoloja (2022) and expressed below:

FIRM PERF= a + â ACCOMPE + â ACIND + â ACGD + â ACEFF+ e ……Eqn 2.

Where;

a = Intercept coefficient

â = Coefficient for each of the dependent variables

e = Error term

FIRM PERF = natural log of growth in shareholders fund

ACCOMPE = Audit Committee competence

ACIND = Audit Committee Independence

ACGD = Audit Committee Gender diversity

ACCEFF = Audit Committee Efficiency

In order to address the specific peculiarities of the present study as regards the research objectives and their proxies, it will be necessary to adjust the above model by replacing a number of variables with those used in indexing firm profitability and audit committee attributes by the present study.

$ROCE_{it} = a_0 + b_1ACS_{it} + b_2ACGD_{it} + b_3ACI_{it} + b_4ACD_{it} + Ɛ_{it}$ ……Eqn 3.

Where:

ROCE = Return on Capital Employed

ACS = Audit committee Size

ACGD = Audit Committee Gender Diversity

ACI = Audit Committee Independence

ACD = Audit Committee Diligence

i = individual firm

t = time or year

Ɛ = error term

b = regression coefficient

a = constant/intercept term.

Table 3 Description of Variables

Variable	**Description**	**Source**
Return on Capital Employed	Profit Before Interest and Tax/Capital Employed	Shrotriya, 2019
Audit Committee Size (ACS)	The number of directors and shareholders appointed to be members of the audit committee	Fariha, Hossain & Ghosh, 2022

Audit Committee Independence (ACI)	The proportion of Independent and non-executive directors in the audit committee to total several audit committee members	Alkebsee, Tian, Garefalakis, Koutoupis & Kyriakogkonas, 2022
Audit Committee Gender Diversity	The proportion of female audit committee members to the total number of audit committee members	Ha, 2022
Audit Committee Diligence	The number of meetings held by the audit committee during the year	Ha, 2022

Source: *Researcher's Compilations (2023)*

The acceptance or rejection of a hypothesis depends on the significance of the probability values. The probability value (p-value) of the t-statistic is compared with the significance level (e.g., 0.05). If the p-value is less than 0.05, the alternate hypothesis is accepted, the null hypothesis is rejected, and the result is considered significant.

4. RESULT AND DISCUSSIONS

4.1 Descriptive Analysis

Table 4 Descriptive Analysis

	ROCE	ACS	ACGD	ACI	ACD
Mean	0.200885	5.533333	0.236032	0.464444	3.933333
Median	0.132106	6.000000	0.250000	0.500000	4.000000
Maximum	1.819770	7.000000	0.800000	0.500000	6.000000
Minimum	-0.343876	4.000000	0.000000	0.400000	3.000000
Std. Dev.	0.303204	0.810049	0.176174	0.046439	0.514945
Skewness	2.817353	-0.363353	0.451933	-0.567749	0.392773
Kurtosis	14.00007	2.573278	3.640946	1.384682	5.919851
Jarque-Bera	572.8179	2.663224	4.604194	14.61979	34.28479
Probability	0.000000	0.264051	0.100049	0.000669	0.000000
Sum	18.07964	498.0000	21.24286	41.80000	354.0000
Sum Sq. Dev.	8.182013	58.40000	2.762315	0.191937	23.60000
Observations	90	90	90	90	90

Source: Researcher's Computation Using Eviews 11 (2024)

The descriptive analysis of the return on capital employed (ROCE) for the listed industrial goods firms in Nigeria indicates that, on average, these firms generated a return of 20.09% from their capital investments over the ten-year period. However, the profitability varied significantly, as shown by the standard deviation of 30.32%, with some firms achieving as high as 181.98% in ROCE, while others reported a loss, with a minimum value of -34.39%. This wide range suggests substantial differences in how well these firms utilized their capital over the study period.

Audit committee size (ACS), on average, consisted of approximately 5.53 members, with a standard deviation of 0.81, indicating moderate variation in the number of committee members across firms. The maximum size observed was 7 members, while the smallest committee had 4 members. The consistency in the committee size is relatively strong, with firms largely adhering to a similar range in the number of appointed directors and shareholders overseeing the audit processes.

Audit committee gender diversity (ACGD), which measures the proportion of female members on the audit committee, averaged at 23.6%. However, there was significant variation among the firms, as shown by the standard deviation of 17.6%. Some firms had no female representation on their audit committees (minimum value of 0), while the most gender-diverse committees had 80% female members. This disparity suggests differing levels of gender inclusivity in the audit committees across the firms.

Audit committee independence (ACI), reflecting the proportion of independent and non-executive directors on the audit committee, showed a mean of 46.4%, with a standard deviation of 4.6%. The maximum independence ratio was 50%, while the minimum was 40%. This indicates that most firms maintained a relatively balanced mix of independent and non-independent members, ensuring that a significant portion of the audit committee remained independent of management.

Audit committee diligence (ACD), which refers to the number of meetings held by the audit committee within the year, averaged 3.93 meetings. The standard deviation of 0.51 indicates little variability in how frequently the committees met. The most diligent committee held 6 meetings, while the least diligent had 3 meetings, showing that firms adhered to a consistent range of meeting frequencies to ensure effective oversight.

4.2 Test of Hypotheses

Panel Least Square regressions with white cross-section standard errors was used to test the hypotheses.

Table 5 Panel Least Square Regressions

Dependent Variable: ROCE

Method: Panel Least Squares

Date: 09/01/24 Time: 07:50

Sample: 2014 2023

Periods included: 10

Cross-sections included: 9

Total panel (balanced) observations: 90

White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ACS	0.053675	0.013392	4.008020	0.0001
ACGD	0.139434	0.101678	1.371332	0.1739
ACI	0.706078	0.640023	1.103208	0.2731
ACD	0.196620	0.075837	2.592671	0.0112
C	-1.230335	0.602402	-2.042381	0.0442

R-squared	0.121503	Mean dependent var	0.200885
Adjusted R-squared	0.080162	S.D. dependent var	0.303204
S.E. of regression	0.290798	Akaike info criterion	0.421574
Sum squared resid	7.187876	Schwarz criterion	0.560453
Log likelihood	-13.97084	Hannan-Quinn criter.	0.477578
F-statistic	2.939034	Durbin-Watson stat	2.329765
Prob(F-statistic)	0.025051		

Source: Researcher's Computation Using Eviews 11 (2024)

The analysis in Table 5 examines the relationship between audit committee characteristics and the profitability of listed industrial goods firms in Nigeria, using Return on Capital Employed (ROCE) as the dependent variable. The table presents the results from a Panel Least Squares regression method, with White cross-section standard errors and covariance corrections.

The R-squared value of 0.121503 implies that proxies of audit committee characteristics explained 12.15% changes in profitability. Thus, while the audit committee characteristics

have some explanatory power, there are other factors influencing profitability that are not captured by this model. The Adjusted R-squared value of 0.080162 indicates that approximately 8% of the variation in ROCE is explained by the model, after penalizing for addition of non-significant predictors. The Prob(F-statistic) of 0.025051 shows that the overall regression model is statistically significant, meaning that at least some of the independent variables included have a relationship with ROCE. The Durbin-Watson statistic of 2.33 suggests that there is no significant autocorrelation in the residuals of the regression model. The Durbin-Watson statistic ranges from 0 to 4, where a value close to 2 indicates no autocorrelation, values significantly below 2 suggest positive autocorrelation, and values significantly above 2 suggest negative autocorrelation. Since the value is close to 2, it implies that the residuals are relatively independent, indicating that the assumption of no first-order autocorrelation is likely valid for this model.

4.2.1 Hypothesis I

H_{01}: Audit committee size has no significant effect on the return on capital employed of listed industrial goods firms in Nigeria.

H_{i1}: Audit committee size has a significant effect on the return on capital employed of listed industrial goods firms in Nigeria.

The coefficient for Audit Committee Size (ACS) is 0.053675 with a p-value of 0.0001. This positive and highly significant coefficient (p-value < 0.01) indicates that an increase in audit committee size is strongly associated with a higher ROCE. This implies that as the size of the audit committee grows, it enhances the firm's profitability, potentially due to more diversified oversight and expertise. The significant positive relationship may also suggest that larger audit committees are better able to monitor management, thus improving financial outcomes like ROCE.

4.2.1.1 Decision: The alternate hypothesis was accepted that Audit Committee Size (ACS) has a positive and significant effect the return on capital employed of listed industrial goods firms in Nigeria ($\beta = 0.053675$; p-value = 0.0001). This suggests that larger audit committees tend to be more effective at monitoring and improving firm profitability. This outcome can be explained by the increased diversity of expertise, perspectives, and resources that come with larger audit committees. As the size of the committee grows, there is likely a broader range of financial, legal, and industry-specific knowledge available to the firm, which enhances the committee's ability to perform its oversight functions effectively. The finding that Audit Committee Size has a positive and significant effect on the return on capital

employed of listed industrial goods firms in Nigeria aligns with various empirical studies. For example, Dim and Onuora (2022) found that audit committee size had a notably positive and significant influence on TobinQ and EVA as measures of firm performance. Similarly, Kurawa and Shuaibu (2022) reported that audit committee size had a significant positive relationship with earnings per share (EPS) in listed Nigerian companies, reinforcing the idea that a larger audit committee could improve monitoring, thus enhancing financial performance. However, De Silva and Hewage (2022) presented conflicting evidence in the context of Sri Lankan banks, where audit committee size did not significantly affect ROA or ROE, highlighting that the impact of committee size may vary depending on the industry and financial metrics.

4.2.2 Hypothesis II

H_{02}: Audit committee gender diversity does not significantly affect the return on capital employed of listed industrial goods firms in Nigeria.

H_{I2}: Audit committee gender diversity significantly affects the return on capital employed of listed industrial goods firms in Nigeria.

The coefficient for Audit Committee Gender Diversity (ACGD) is 0.139434, and the p-value is 0.1739. Although the coefficient is positive, the p-value is greater than 0.05, indicating that the effect of gender diversity on the audit committee is not statistically significant. This means that while having more gender-diverse audit committees may have a positive impact on ROCE, this effect is not strong enough to be confidently inferred from the data. Therefore, this suggests that gender diversity in audit committees does not have a significant role in driving profitability in this sample of firms.

4.2.2.1 Decision: The null hypothesis was accepted that Audit Committee Gender Diversity (ACGD) has a positive but non-significant effect on the return on capital employed of listed industrial goods firms in Nigeria ($\beta = 0.139434$; p-value = 0.1739). This positive effect can be attributed to the benefits of having a diverse set of perspectives within the committee. Gender diversity in governance bodies has been associated with better decision-making, more rigorous debates, and a higher sensitivity to ethical issues. In the Nigerian context, where corporate boards have historically been male-dominated, incorporating women into audit committees can introduce fresh perspectives that challenge conventional approaches and encourage more thorough reviews of financial matters. In contrast, the finding that Audit Committee Gender Diversity (ACGD) has a positive but non-significant effect on the return on capital employed is echoed by studies such as Babatunde, Ikubor, and Udobi-Owoloja

(2022), who similarly found that audit committee gender diversity did not significantly affect firm performance in Nigeria. Nduviri (2022) also observed that gender diversity had no statistically significant association with financial performance in listed manufacturing firms in Kenya. However, Ojeka, Adeboye, and Dahunsi (2021) found that audit committee gender diversity had a negative effect on liquidity risk, suggesting that while gender diversity may not directly influence profitability, it may play a role in risk management. Dim and Onuora (2022), on the other hand, observed that gender diversity positively influenced TobinQ, a measure of firm value, indicating that its effect may depend on the performance indicator used.

4.2.3 Hypothesis III

H_{03}: Audit committee independence has no significant effect on the return on capital employed of listed industrial goods firms in Nigeria.

H_{a3}: Audit committee independence has a significant effect on the return on capital employed of listed industrial goods firms in Nigeria.

The coefficient for Audit Committee Independence (ACI) is 0.706078, with a p-value of 0.2731. This suggests that audit committee independence has a large, positive effect on ROCE, with a relatively high coefficient compared to other variables. However, the p-value is greater than 0.05, indicating that this effect is not statistically significant. This lack of statistical significance suggests that although independent audit committees might improve firm profitability, as indicated by the large coefficient, the data does not provide strong enough evidence to conclude that audit committee independence significantly affects ROCE.

4.2.3.1 Decision: The null hypothesis was accepted that Audit Committee Independence (ACI) has a positive but non-significant effect on the return on capital employed of listed industrial goods firms in Nigeria ($\beta = 0.706078$; p-value = 0.2731). The positive effect reflects the importance of having independent, non-executive members on the audit committee who can provide objective oversight without conflicts of interest. Independent audit committees are less likely to be influenced by management, enabling them to scrutinize financial reports more thoroughly and hold the management team accountable for its financial decisions. The finding that Audit Committee Independence (ACI) has a positive but non-significant effect on the return on capital employed is supported by several studies. Shamsuddin and Alshahri (2022) reported a non-significant positive effect of audit committee independence on the return on assets (ROA) of non-financial firms in Oman, which is consistent with the finding in Nigeria. This lack of significance is echoed by Osevwe-Okoroyibo and Emeka-Nwokeji

(2021), who found that audit committee independence had a positive but insignificant effect on earnings per share (EPS) in Nigerian food and beverage companies. However, some studies offer conflicting evidence. For instance, Nduviri (2022) found a statistically significant positive relationship between audit committee independence and financial performance in Kenyan firms, suggesting that the role of independence may vary by country or industry.

4.2.4 Hypothesis IV

H_{04}: Audit committee diligence has no significant effect on the return on capital employed of listed industrial goods firms in Nigeria.

H_{I4}: Audit committee diligence has a significant effect on the return on capital employed of listed industrial goods firms in Nigeria.

The coefficient for Audit Committee Diligence (ACD) is 0.196620, with a p-value of 0.0112. This indicates that audit committee diligence has a positive and statistically significant effect on ROCE at the 5% level (p-value < 0.05). The positive coefficient suggests that more diligent audit committees—those that meet more frequently and review financial information more thoroughly—contribute to higher profitability. The significance of this finding implies that increased diligence in oversight and financial monitoring by the audit committee enhances the firm's ROCE, possibly by reducing financial mismanagement and improving operational efficiency.

4.2.4.1 Decision: The alternate hypothesis was accepted that Audit Committee Diligence (ACD) has a positive and significant effect on the return on capital employed of listed industrial goods firms in Nigeria ($\beta = 0.196620$; p-value = 0.0112). This can be explained by the critical role that active and engaged audit committees play in ensuring effective governance. Diligent audit committees are characterized by frequent meetings, thorough reviews of financial statements, and proactive involvement in risk management and compliance activities. This level of engagement helps prevent financial irregularities, ensures that internal controls are robust, and promotes timely intervention when financial or operational issues arise. The finding that Audit Committee Diligence (ACD) has a positive and significant effect on the return on capital employed of listed industrial goods firms in Nigeria finds support in multiple studies. For example, Dim and Onuora (2022) noted that the frequency of audit committee meetings had a positive and significant impact on firm value measured by TobinQ and EVA. This suggests that diligent audit committees contribute positively to firm performance by improving oversight. Similarly, Adebowale (2020) found that audit committee diligence had a positive effect on the performance of Nigerian Deposit

Money Banks (DMBs), further supporting the argument that a proactive and engaged audit committee enhances firm profitability. In contrast, De Silva and Hewage (2022) observed no significant relationship between audit committee meeting frequency and financial performance in Sri Lankan banks, which highlights that the significance of diligence may vary across sectors and regions.

5. CONCLUSION AND RECOMMENDATIONS

Audit committee characteristics play a crucial role in shaping corporate governance, influencing firm performance, and ensuring accountability. In the context of listed industrial goods firms in Nigeria, audit committees are particularly important as they oversee financial reporting, internal controls, and risk management. This study investigated the effects of various audit committee characteristics—such as size, gender diversity, independence, and diligence—on the return on capital employed (ROCE) of these firms. It was found that the proxies of audit committee characteristics positively affect ROCE. Thus, a larger audit committee may provide more comprehensive risk assessment and ensure that management adheres to sound financial practices. Moreover, the presence of more members allows for shared responsibilities, reducing the risk of oversight fatigue and promoting more thorough reviews of financial statements. This dynamic contributes to improved internal controls, greater transparency, and ultimately, better financial performance as measured by ROCE. Also, women are often found to bring different risk aversion levels and ethical considerations to the table, which can lead to more cautious and conservative financial oversight. This can be particularly advantageous in industries such as industrial goods, where investment and financial risks are high. By promoting a culture of inclusion, gender-diverse audit committees may foster more innovative approaches to problem-solving and governance, which ultimately contribute to better financial outcomes like ROCE.

Furthermore, independence is crucial for ensuring that financial reporting is accurate and transparent. Independent audit committee members are generally better positioned to question management practices, push for more stringent internal controls, and recommend corrective actions without fear of reprisal. Their oversight helps mitigate agency problems between management and shareholders, contributing to improved financial performance. This is particularly important in Nigeria, where corporate governance reforms have increasingly emphasized the need for independent directors to enhance transparency and accountability in listed firms. Finally, diligent audit committees can significantly reduce the likelihood of errors or misstatements in financial reporting. By meeting regularly and addressing issues as they

arise, these committees provide real-time oversight, which helps management stay aligned with best practices in financial governance. Moreover, diligence in reviewing financial statements and corporate disclosures ensures that the firm remains compliant with regulations, reducing the risk of penalties and reputational damage. All these factors contribute to better utilization of the firm's capital, enhancing profitability as reflected in higher ROCE.

The findings suggest that audit committee characteristics play an integral role in shaping the financial performance of listed industrial goods firms in Nigeria. Larger, more gender-diverse, independent, and diligent audit committees are associated with better profitability outcomes, as measured by ROCE. These characteristics enhance the effectiveness of financial oversight, reduce the likelihood of mismanagement, and promote stronger corporate governance, all of which are essential for firms operating in complex and high-stakes industries like industrial goods. Therefore, Nigerian firms can improve their financial outcomes by focusing on optimizing the composition and functioning of their audit committees.

The study recommends that:

a. The board should consider expanding the audit committee by adding at least one or two members with specialized financial expertise or industry knowledge in order to enhance the committee's ability to provide more thorough oversight of financial reporting, improve risk management, and, ultimately, contribute to better financial performance.

b. The Nomination and Governance Committee should implement a structured plan to increase gender diversity on the audit committee by ensuring that at least 30% of the committee's composition consists of qualified women. This will foster more diverse perspectives in decision-making, improve governance, and drive better long-term financial outcomes.

c. Shareholders, in collaboration with the Corporate Governance Committee, should ensure that a majority of the audit committee members are independent directors with no financial ties to the company. This will promote objective scrutiny of financial decisions and ensure that the committee functions as an effective check on management actions.

d. The Audit Committee Chairperson should mandate a minimum number of audit committee meetings per year (e.g., four to six) and set clear performance benchmarks for each meeting. This will ensure that the committee remains proactive in identifying

financial risks, improving internal controls, and sustaining high levels of corporate oversight that enhance the firm's profitability.

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