

# Audit Firm Physiognomies: a contrivance for Mitigating Corporate Failures in Listed Consumer Goods Firms in Nigeria

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## Abstract

*The study examined audit firm physiognomies as a contrivance for mitigating corporate failures in listed consumer goods firms in Nigeria. The specific objective of the study was to ascertain the extent to which audit fee, audit firm size and audit firm tenure help to prevent the likelihood of corporate failure. The likelihood of corporate failure was measured using Altman's Z-score framework. The study employed an ex-post facto research design. All twenty-one firms listed under the consumer goods sector of the Nigerian Exchange Group comprised the population of the study. The study utilized purposive sampling to select 16 firms that made up the sample size. Secondary data were sourced from the audited financial statements and annual reports of the firms over a 10 year period, from 2012 to the 2021. In addition to the descriptive analysis, the study employed ordinary regression method to test the hypotheses. The findings revealed that: larger audit fee significantly helps to mitigate the likelihood of corporate failure ( $p$ -value = 0.0000); larger audit firm size significantly helps to mitigate the likelihood of corporate failure ( $p$ -value = 0.0036); but higher audit firm tenure worsens the likelihood of corporate failure although this effect is not significant ( $p$ -value = 0.0923). In conclusion, a high-quality audit can help companies to identify potential risks and take necessary measures to mitigate them, thereby reducing the likelihood of financial distress. The study recommends that firms in Nigeria should consider investing in high-quality audits, even if it means incurring higher audit fees which can help to enhance the accuracy and credibility of their financial statements, thereby fostering greater investor confidence and securing long-term financial stability.*

**Keywords:** Audit Firm Physiognomies, Corporate Failures, Audit Fee, Audit Firm Size, Audit Firm Tenure and Altman's Z-score

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## 1.0 INTRODUCTION

Over time, corporate failure, also known as financial distress, often occurs when a company cannot meet its financial obligations or sustain its operations, ultimately leading to insolvency or bankruptcy (Okeke, Nwoha & Duru, 2024; Alade, 2024). Such failures in any sector often result in significant job losses, reduced economic growth, and diminished investor confidence. Therefore, it is imperative to understand the factors contributing to corporate failure, including the role of audit firm physiognomies in this process (Imade, 2021). The influence of audit firm physiognomies on corporate failure likelihood of firms is a crucial topic in accounting and finance research (Perdana, Tambunan & Kumullah, 2020) more because the audit function

plays a vital role in enhancing corporate governance and mitigating financial reporting risks (Ajape, Adeleye, Salawu & Ogunleye, 2021). In fact, effective audits can provide assurance about the accuracy of financial statements, thereby improving transparency and trust among stakeholders (Nwaobia, Siyanbola, & Orekoya, 2022). Corporate failure in this context refers to the inability of a firm to meet its financial obligations, such as payment of debts, payment of employee salaries, and payment of taxes (EL Deeb & Ramadan, 2020). Corporate failure is a critical concern for investors, regulators, and other stakeholders, as it can lead to a loss of confidence in the firm and ultimately result in its collapse (Chang & Hwang, 2020).

On the other hand, audit firm physiognomies refer to the characteristics of the audit firms hired by the consumer goods firms. These characteristics may include the size of the audit firm, the reputation of the audit firm, the level of industry specialization, and the level of audit quality (Perdana, Tambunan & Kumullah, 2020). The effect of audit firm physiognomies on corporate failure is complex and multifaceted, and can be influenced by a wide range of factors (Lu & Ma, 2016). By considering factors such as audit fee, audit firm size and audit firm tenure, however, firms and auditors can take steps to minimize the risk of corporate failure and ensure that financial reporting is accurate and reliable (Mohammed & Joshua, 2016). The independence of the audit firm is crucial in ensuring that the audit is conducted without bias or influence from the client firm. Furthermore, the size and structure of the audit firm can also have an impact on corporate failure. Larger audit firms tend to have more resources and expertise, which can lead to higher-quality audits and lower rates of failure (Omorieg & Dibi, 2020). The structure of the firm, such as the extent of decentralization and specialization, can also affect the quality of the audit. On the other hand, longer audit firm tenure may result in a familiarity threat to auditor objectivity. This is because the longer an audit firm works with a particular client, the more likely it is that they will develop a close relationship with management (Sanni, Abdulazeez & Mudathir, 2021). This can lead to a situation where the auditor becomes too sympathetic to management and less likely to scrutinize their actions or decisions. This could contribute to corporate failure by allowing management to engage in fraudulent or unethical behavior that goes undetected by the auditor (Lu & Ma, 2016).

The quality of the audit performed by the audit firm can have a significant impact on the likelihood of corporate failure (Chang & Hwang, 2020). A high-quality audit is more likely to detect financial irregularities, misstatements, and other problems that can lead to failure (Akani, Fyeface & Ohaka, 2016). Factors that contribute to high-quality audits include the experience, expertise, and diligence of the audit team, as well as the firm's reputation for delivering high-quality work (Ilaboya & Ohiokha, 2014). High audit firm physiognomies are essential for ensuring that audit firms operate with integrity and provide high-quality services to their clients (Imade, 2021). When an audit firm has high characteristics, it indicates that the firm has the necessary skills, resources, and ethical standards to deliver effective and independent audit services (Sanni, Abdulazeez & Mudathir, 2021). This is particularly relevant in the context of corporate failure among listed consumer goods firms in Nigeria. One of the main benefits of high audit firm physiognomies is that they can improve the accuracy and reliability of financial statements. When an audit firm is independent and has the necessary resources and expertise, it can provide a thorough and accurate assessment of a company's financial position. This can help to identify potential risks and issues, allowing the company to take corrective action before a crisis occurs (Omorieg & Dibia, 2020).

In addition, high audit firm physiognomies can help to promote transparency and accountability in the audit process (Mohammed & Joshua, 2016). When an audit firm has a strong reputation for independence and ethical standards, it can enhance the credibility of the audit process and promote public trust in financial reporting. This can be particularly relevant in the context of corporate failure, as it can help to prevent fraudulent or misleading financial reporting (Chang & Hwang, 2020). Overall, high audit firm physiognomies are essential for promoting the integrity and reliability of the audit process, which is critical for ensuring the long-term sustainability of firms in Nigeria (Imade, 2021).

However, despite the requirement for external audits, corporate failures among firms continue to occur (Atagboro, 2023; Nwaobia, Siyanbola & Orekoya, 2022; Osazefua, 2020). There is a growing concern about the quality of audits being conducted by external auditors, and the potential effect of audit firm physiognomies, such as audit firm size, tenure, and fees (Ajape, Adeleye, Salawu & Ogunleye 2021), affect the likelihood of the occurrence of corporate failures. Poor audit firm physiognomies lead to corporate failure in several ways. Once audit firm are faced with the problem of insufficient resources, inadequate expertise, or pressure to maintain good client relationships, this can result in material misstatements going undetected in the financial statements (Lu & Ma, 2016). The consequences of unreliable financial information and corporate failures can be significant, affecting investors, creditors, employees, and the overall economy (Butar, 2020). Investors may lose money and confidence in the Nigerian capital market, leading to a decrease in investment and economic growth. Creditors may also be affected, leading to the possible collapse of financial institutions. Moreover, employees may lose their jobs, resulting in social and economic hardships for their families and communities. Therefore, it is essential to examine the effect of audit firm physiognomies on corporate failure of listed consumer goods firms in Nigeria especially now that existing studies such as Imade (2021); Ajape, Adeleye, Salawu and Ogunleye (2021); Omoregie and Dibia (2020); Chang and Hwang (2020); Perdana, Tambunan and Kumullah (2020); Chen, Dong & Shan, Amit and Zhang, Yarong. (2020); Chen, Shan and Zhang (2020); Lu and Ma (2016); Mohammed and Joshua (2016); Ilaboya and Ohiokha (2014) et cetera rarely investigated the influence of audit fee on the corporate failure of firms using evidence sourced from consumer goods firms in Nigeria.

The broad objective of the study is to examine audit firm physiognomies as a contrivance for mitigating corporate failures in listed consumer goods firms in Nigeria. The specific objectives are:

- 1) To determine the extent to which audit fee helps to prevent the likelihood of corporate failure among listed consumer goods firms in Nigeria.
- 2) To examine the degree to which audit firm size helps to prevent the likelihood of corporate failure among listed consumer goods firms in Nigeria.
- 3) To ascertain the degree to which audit firm tenure helps to prevent the likelihood of corporate failure among listed consumer goods firms in Nigeria.

## **2.0 REVIEW OF RELATED LITERATURE**

### **2.1 Conceptual Review**

#### **2.1.1 Selected Audit firm physiognomies: Audit Firm Size, Fee and Tenure**

Audit firm physiognomies refer to the features and attributes of an audit firm that may impact the quality and effectiveness of their audit services (Sanni Abdulazeez & Mudathir, 2021). They are the specific features of an audit firm, such as its size, reputation, tenure, expertise, and independence that may influence the quality of its audit services (Mohammed & Joshua, 2016). Audit firm physiognomies are the distinguishing traits and features that differentiate one audit firm from another (Heshmatzadeh, Jamali & Momeni, 2023). They are unique attributes, skills, and competencies that an audit firm possesses and which define its identity and reputation (Soroushyar, 2023). Furthermore, audit firm physiognomies are the values, culture, and ethos that guide an audit firm's operations, decision-making, and interactions with clients (Imade, 2021). More broadly, they are the organizational structure, management style, and business practices that an audit firm uses to deliver its audit services. They connote the human resources policies and practices that an audit firm uses to recruit, develop, and retain its employees.

Audit firm physiognomies can play a significant role in determining the quality and effectiveness of an audit engagement (Ajape, Adeleye, Salawu & Ogunleye, 2021). Audit fees are an essential aspect of the audit process, representing the remuneration paid by the firm to the auditor for the services rendered (Lu & Ma, 2016). The fee charged by the audit firm varies depending on the nature of the audit, the complexity of the client's operations, and the time and resources required to conduct an effective audit (Ajape, Adeleye, Salawu & Ogunleye, 2021). Audit fees typically cover a range of services, including planning and executing the audit, identifying and assessing risks, reviewing financial statements, verifying information provided by the client (Teng & Han, 2023), and providing recommendations for improvements to internal controls and financial reporting (Imade, 2021). The fee charged by the audit firm must be reasonable and commensurate with the level of work required to perform an effective audit (Lu & Ma, 2016). The audit fee may be a fixed amount, hourly rate, or a combination of both, depending on the terms agreed upon between the client and the audit firm (Omoriegbe & Dibia, 2020). In some cases, the fee may be negotiated based on the client's size, complexity, and industry, as well as the reputation and expertise of the audit firm (Perdana, Tambunan & Kumullah, 2020). It is important to note that audit fees do not cover additional services such as tax consulting or advisory services that may be provided by the audit firm. These additional services must be separately negotiated and billed to the client. The fee charged by the audit firm can also be affected by external factors such as regulatory requirements, changes in accounting standards, or increased scrutiny by stakeholders (Sanni Abdulazeez & Mudathir, 2021). In some cases, external pressures may result in an increase in audit fees as the audit firm is required to provide additional services to meet regulatory or stakeholder demands (Alves, 2023).

Audit firm size can be defined in various ways, such as the number of employees, partners, clients, or revenues (Imade, 2021). The size of an audit firm can influence the quality of its services and the level of resources it can allocate to a particular client (Ilaboya & Ohiokha, 2014). For instance, larger audit firms may have more specialized staff and more sophisticated audit methodologies that enable them to perform more complex audit tasks than smaller firms (Imade, 2021). In this particular study, audit firm size is operationalized as whether or not a

Big4 audit firm was engaged by the audit client in line with the study by Butar (2020). The Big4 audit firms, which include Deloitte, PwC, EY, and KPMG, are commonly regarded as the largest and most prestigious audit firms worldwide (Perdana, Tambunan & Kumullah, 2020). These firms have a vast global presence, numerous employees, and a broad client base across various industries (Butar, 2020). Thus, it is assumed that Big4 audit firms are generally larger and have more resources than non-Big4 auditors. The choice of using Big4 audit firms as a proxy for audit firm size is relevant because these firms often have significant brand recognition, reputation, and experience in auditing complex and large-scale clients (Butar, 2020). Furthermore, Big4 audit firms may have greater access to advanced technology, specialized software, and training resources, which can enhance the quality and efficiency of their audit processes (Elewa & El-Haddad, 2019). Large audit firms are generally regarded as having more resources than smaller firms (Ilaboya & Ohiokha, 2014), which can enable them to invest in advanced technology, specialized software, and training resources to enhance their audit processes.

Audit firm tenure is a measure of the length of time an audit firm has been providing audit services to a particular client. The duration of the audit firm's engagement with a client can have a significant impact on the quality of its audit services, as well as the independence and objectivity of the audit firm (Sanni Abdulazeez & Mudathir, 2021). The longer an audit firm has been providing audit services to a client, the greater the risk that the audit firm may become too familiar with the client's operations and may not maintain the necessary level of independence and objectivity (Mohammed & Joshua, 2016). This is because long-standing relationships with clients can create an environment where auditors may become too close to the client and may be reluctant to challenge their accounting practices or financial reporting decisions. Furthermore, long audit firm tenure can also lead to a level of complacency or a lack of skepticism that can compromise the quality of audit services (Ilaboya & Ohiokha, 2014). For instance, auditors may rely too heavily on prior years' audit work or may fail to identify new risks or issues that arise in the current year's audit. On the other hand, shorter audit firm tenure may also pose risks to audit quality, as the audit firm may not have sufficient knowledge of the client's business operations or financial reporting practices (Imade, 2021). This can result in inadequate audit planning, limited understanding of the client's risks and control environment, and a higher likelihood of audit errors or omissions.

### **2.1.2 Corporate Failure**

Corporate failure is a term used to describe the financial difficulties that a company may face, leading to its inability to meet its financial obligations. Corporate failure can manifest in various ways, including bankruptcy, insolvency, or liquidation (Mohan, 2022). Corporate failure is a term used to describe a company's inability to meet its financial obligations, resulting in financial distress and potential collapse (Veganzones, Séverin & Chlibi, 2023). From a conceptual perspective, corporate failure can be defined as a situation where a company's financial position deteriorates to the point where it is unable to generate sufficient cash flow to meet its operating expenses and debt obligations (Borchert, Coussement, De Caigny & De Weerd, 2023). This can happen due to a variety of factors, such as poor financial management, inadequate corporate governance, excessive debt levels, declining market conditions, or unforeseen events such as pandemics or natural disasters (Imade, 2021). Corporate failure can have severe consequences for the company, its shareholders, and its employees. It can result in the loss of jobs, investments, and business opportunities. It can also

have wider economic impacts, such as reducing consumer confidence and affecting the supply chain.

The causes of corporate failure can vary, but common factors include poor financial management, inadequate corporate governance, high levels of debt, and changes in market conditions (Mujih, 2021). Early identification of financial distress and appropriate corrective action can help prevent or mitigate the effects of corporate failure. This can include improving financial management, restructuring debt, selling off non-core assets, or seeking new sources of financing. Thus, corporate failure is a serious issue that can have far-reaching consequences (Veganzones, Séverin & Chlibi, 2023).

### **2.1.2.1 Altman's Z-score as an indicator of Likelihood of Corporate Failure**

In 1968, Professor Edward I. Altman, a renowned financial expert and researcher, developed a financial tool known as Altman's Z-score, which is widely used to predict the likelihood of corporate failure (EL Deeb & Ramadan, 2020). The Z-score is a statistical measure that assesses the financial risk and health of a company based on several financial ratios (Lu & Ma, 2016). The formula for calculating the Z-score incorporates various financial data, including liquidity, profitability, leverage, solvency, and other relevant ratios (Panigrahi, 2019). This composite score ranges from 0 to 10, with a score below 1.81 indicating a high likelihood of corporate failure, while a score above 2.99 implies a low probability of failure (Altman, 1968).

The Z-score is a vital tool in financial analysis, as it helps investors, creditors, and other stakeholders to evaluate the financial position and risk of a company, enabling them to make informed investment and credit decisions (Swalih, Adarsh & Sulphrey, 2021). Investors, creditors, and financial analysts widely use Altman's Z-score to evaluate the financial health of companies, particularly those facing financial distress (Imade, 2021). The Z-score can serve as an early warning system for identifying companies that may be at risk of bankruptcy or insolvency (Nduokafor, Ukoh & Nworie, 2024). Empirical studies have validated the use of Altman's Z-score in predicting the probability of corporate failure (Lu & Ma, 2016). The tool has been demonstrated to be reliable and accurate, making it a recommended method by regulatory bodies and financial institutions for assessing the financial viability of companies (Lord, Landry, Savage & Weech-Maldonado, 2020). Altman Z-Score is calculated thus:

$$AZS = 1.2 * X_1 + 1.4 * X_2 + 3.3 * X_3 + 0.6 * X_4 + 1.0 * X_5$$

Where:

$X_1$  = working capital to total assets ratio

$X_2$  = retained earnings to total assets ratio

$X_3$  = Profit before interest & tax to total assets

$X_4$  = market value of equity to book value of total liabilities

$X_5$  = Revenue to total assets

### 2.1.3 Theoretical Framework and Hypotheses Development

The hypotheses drawn in this study were based on the postulations of agency theory. The origins of agency theory can be traced back to the work of economist Adolph Berle and lawyer Gardiner Means in their book, "The Modern Corporation and Private Property," published in 1932 (Pepper & Pepper, 2019). In the book, Berle and Means argue that there is a separation of ownership and control in modern corporations, with managers acting as agents for shareholders. This separation creates a potential conflict of interest, as managers may prioritize their own interests over those of the shareholders.

In the 1960s, economists Michael Jensen and William Meckling further developed the agency theory, emphasizing the role of information asymmetry between principals and agents (Ajape, Adeleye, Salawu & Ogunleye, 2021). They argued that the agent has access to more information than the principal, and may use this information to act in their own self-interest rather than in the best interest of the principal (Okpala, 2015). The agency theory gained prominence in the field of management in the 1980s, as scholars began to apply the theory to a wide range of organizational settings. Today, the theory is widely accepted in management and economics as a useful framework for understanding the challenges of managing and controlling organizations, particularly in situations where there are conflicts of interest between managers and shareholders.

Agency theory is a well-known concept in the field of corporate governance that explains the relationship between the principal and the agent. The principal is the owner of the company who delegates the management responsibilities to the agent, who is typically the top management team. In this relationship, the principal is reliant on the agent to make decisions and act in their best interest. However, the agent may have more information and expertise than the principal and may act in their own interest, leading to a conflict of interest (Aliyu, Musa & Zachariah, 2015).

The role of the auditor is to provide assurance to the principal that the agent's actions are in line with their interests. This is achieved by performing an independent audit of the company's financial statements and internal controls to ensure that they are accurate and reliable. The audit process involves examining evidence and making professional judgments to provide reasonable assurance that the financial statements are free from material misstatements (Perdana, Tambunan & Kumullah, 2020).

The audit firm's characteristics, such as size, fees, tenure, reputation, and expertise, are held to affect the level of assurance provided by the auditor and the likelihood of corporate failure. For example, a larger audit firm may have more resources and expertise to conduct a thorough audit, whereas a smaller audit firm may not have the same level of resources. Similarly, a higher audit fee may allow for more time and resources to be dedicated to the audit, potentially leading to a higher quality audit. Agency theory is relevant to this study based on its position that the relationship between the principal and agent is characterized by a conflict of interest, and the role of the auditor is to provide assurance to the principal that the agent is acting in their best interest. The audit firm physiognomies are believed to impact the level of assurance provided by the auditor and the likelihood of corporate failure, making it an important consideration for stakeholders.

Audit firm physiognomies, such as fees, rotation and tenure, significantly influence the quality of audits and the likelihood of detecting errors or fraud, thereby mitigating the risk of corporate failure (Sanni Abdulazeez & Mudathir, 2021). However, issues such as a lack of independence, conflicts of interest, or inadequate resources within an audit firm can compromise audit quality, ultimately increasing the risk of corporate failure. Audit firms play a critical role in ensuring the accuracy and reliability of financial statements (Mohammed & Joshua, 2016).

Firstly, the size of an audit firm can affect the quality of its audit (Ajape, Adeleye, Salawu & Ogunleye, 2021). Large audit firms are generally perceived to have greater resources, expertise, and reputation than smaller firms. Therefore, they may be better equipped to conduct thorough audits and identify material misstatements. However, smaller firms may provide more personalized attention to their clients and may be better suited to identify specific risks or issues that larger firms may overlook. Also, while some companies may opt for less expensive audit firms to reduce costs, this approach can result in lower-quality audits and elevate the risk of corporate failure. Conversely, higher fees do not automatically ensure a high-quality audit; the fees charged by audit firms must align with the level of effort required to perform an effective audit. The tenure of an audit firm alongside frequency of audit firm rotation is another significant factor influencing audit quality. Long-term relationships between audit firms and their clients, without adequate auditor rotation, can lead to the development of close ties, potentially compromising the firm's objectivity and independence, which can result in a lower quality audit. Regular rotation of audit firms is recommended to bring fresh perspectives and minimize conflicts of interest (Elewa & El-Haddad, 2019). In contrast, when audit firms lack independence, face conflicts of interest, or have inadequate resources, the quality of their audits is compromised, increasing the risk of corporate failure. For instance, if an audit firm has a financial stake in a client's success, it may be tempted to overlook issues or material misstatements in the client's financial statements. Similarly, an audit firm lacking the necessary expertise or resources may fail to detect important information or significant risks, thereby undermining the effectiveness of the audit (Mohammed & Joshua, 2016). In line with the premises above, we therefore hypothesise that:

- 1) Larger audit fee significantly helps to mitigate corporate failure.
- 2) Larger audit firm size significantly helps to mitigate corporate failure.
- 3) Higher audit firm tenure will worsen the likelihood of corporate failure.

### **2.3 Empirical Review**

Imade (2021) studied the impact of audit quality on the going concern of quoted non-financial companies in Nigeria. The study used proxies such as Audit Firm Size, Audit Tenure, Audit Fee, Joint Audit, and Audit Delay for audit quality, and the Altman Z scores index for going concern. Using secondary data from annual reports (2011-2020) and a sample of 84 companies, the study found that audit firm size, audit tenure, and audit fee significantly affect going concern. Joint audit and audit delay had no significant effect.

Ajape et al. (2021) examined the impact of audit quality on the financial reporting quality (FRQ) of companies in Nigeria's consumer goods sector from 2011 to 2020. Using panel data and purposive sampling, the study analyzed secondary data from 21 companies. Findings showed that audit quality significantly improves FRQ.



Chang and Hwang (2020) analyzed the effect of audit quality on financial distress in Chinese firms from 2002 to 2018 using binary choice models and life test methods. They found that audit quality negatively correlates with the likelihood of financial distress, highlighting the role of high-quality audits in mitigating financial risk.

Chen, Shan, and Zhang (2020) studied the relationship between audit quality and financial distress likelihood in non-financial Chinese corporations. They discovered that high-quality audits reduce financial hardship risk, with the effect more pronounced in firms with higher growth rates and influenced by ownership characteristics.

EL Deeb and Ramadan (2020) examined the link between financial distress and audit quality in Egyptian companies listed on the stock exchange from 2015 to 2017. Using regression analysis, they found a significant negative correlation between financial distress and audit quality, suggesting that better audit quality reduces financial distress.

Perdana, Tambunan, and Kumullah (2020) assessed the impact of audit quality on financial distress probability in the Indonesian mining sector from 2013 to 2018. Their binary logistic regression analysis revealed that audit quality, as proxied by the Big Four auditors, significantly reduces financial distress likelihood.

Cenciarelli, Greco, and Allegrini (2018) investigated the link between external auditor characteristics and bankruptcy likelihood in US public companies. They found that firms audited by industry-expert, large, and long-tenured auditors are less likely to default, suggesting that auditor attributes enhance bankruptcy prediction models' accuracy.

Akani, Fyनेface, and Ohaka (2016) analyzed audit firm characteristics' impact on audit failure in Nigerian firms from 2007 to 2012. Their findings indicated that audit fees and firm tenure significantly affect audit failure, recommending enhanced quality control and auditor training.

Lu and Ma (2016) examined the relationship between audit quality and financial distress in Chinese firms from 2012 to 2013. Their correlation and regression analyses indicated a negative relationship between audit quality and financial distress, especially in high-growth firms.

Ilaboya and Ohiokha (2014) studied audit firms' characteristics' impact on audit quality in Nigerian food and beverage companies from 2007 to 2012. Their multivariate regression analysis revealed a positive relationship between firm size, board independence, and audit quality, and a negative relationship between auditor independence, audit firm size, tenure, and audit quality.

### **3.0 METHODOLOGY**

The study employed an ex-post facto research design. This design was chosen because the data collected on the study variables pertained to the past and were therefore historical. Data for each firm under study were gathered from 2012 to 2021, covering a ten-year period. Given that the events being analyzed have already taken place, the ex-post facto research design was deemed the most appropriate for the study (Nworie, Okafor & John-Akamelu, 2022). All twenty-one firms listed under the consumer goods sector of the Nigerian Exchange Group

(NGX) as at the end of December 31, 2021 trading day comprised the population of the study (see Table 3.1).

**Table 3.1 Study Population**

Name	
1. Cadbury Nigeria Plc.	11. Multi-trex Integrated Foods Plc.
2. Champion Brewery Nig. Plc.	12. Northern Nig. Flour Mills Plc
3. Dangote Sugar Refinery Plc.	13. Nascon Allied Industries Plc.
4. DN Tyre and Ruber Plc.	14. Nestle Nigeria Plc
5. Flour Mills Nig. Plc.	15. Nigerian Breweries Plc
6. Golden Guinea Brewery Plc.	16. Nigerian Enamelware Plc
7. Guinness Nig. Plc	17. PZ Cussons Nigeria Plc.
8. Honeywell Flour Mill Plc.	18. Unilever Nigeria Plc.
9. International Breweries Plc.	19. Union Dicon Salt
10. MCnichols Plc.	20. Vitafoam Nigeria Plc
	21. Bua Food

Source: NGX (2021).

The study utilized purposive sampling, a technique that involves selectively choosing population members based on specific characteristics. In order to be selected for the sample, population members must have uploaded their financial statements on either their own website or the website of the Nigerian Exchange Group between 2012 and 2021. As a result, only firms that met this criterion were included in the sample (see Table 3.2).

**Table 3.2 Study Sample**

1. Cadbury Nigeria Plc.	9. Nascon Allied Industries Plc.
2. Champion Brewery Nig. Plc.	10. Nestle Nigeria Plc
3. Dangote Sugar Refinery Plc.	11. Nigerian Breweries Plc
4. Flour Mills Nig. Plc.	12. Nigerian Enamelware Plc
5. Guinness Nig. Plc	13. PZ Cussons Nigeria Plc.
6. Honeywell Flour Mill Plc.	14. Unilever Nigeria Plc.
7. International Breweries Plc.	15. Union Dicon Salt
8. Northern Nig. Flour Mills Plc	16. Vitafoam Nigeria Plc.

Source: Author's Compilation, 2023

For this study, secondary data were utilized from the audited financial statements and annual reports of various consumer goods firms. The data collection period spanned 10 years, from 2012 to the 2021 financial year. The specific variables obtained included audit fees, audit tenure, audit firm size, and Altman's Z-score. The financial statements of the firms are a valid and reliable research instrument for this study, as they have undergone statutory audits. These audits ensure the accuracy and completeness of the financial information contained in the statements. As such, the collected data were deemed to be suitable for the purposes of this study.

The operational measurement of the variables is shown in **Table 3.3** below.

**Table 3.3 Operationalization of Variables**

<b>Dependent variable</b>		
Altman Z-Score	$1.2*X_1 + 1.4*X_2 + 3.3*X_3 + 0.6*X_4 + 1.0*X_5$ Where: $X_1$ = working capital to total assets ratio $X_2$ = retained earnings to total assets ratio $X_3$ = Profit before interest & tax to total assets $X_4$ = market value of equity to book value of total liabilities $X_5$ = Revenue to total assets	Altman (1968)
<b>Independent variables:</b>		
Audit Fee	Auditor's Fee is the amount paid to auditors.	Imade (2021)
Audit Firm Size	Big4 auditors in Dummy (1,0) is computed as "1" for companies that hire PWC, Deloitte, E&Y and KPMG as external auditors and "0" otherwise	Imade (2021)
Audit Firm Tenure	Auditor tenure is measured as "1" for companies that have engaged an external auditor for at least three years, and "0" for auditors with less than three years of engagement.	Imade (2021)

Source: Researcher's Compilation (2023)

The Altman Z-score model evaluates a company's financial health by applying a functional expression that involves the calculation of the formula:  $Z\text{-Score} = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$ . The resulting value of the Z-score is obtained by aggregating the input variables. Based on the Z-score, the model classifies firms into three categories: those in financial distress, with a score of less than 1.81; those in the grey area, with a score between 1.81 and 2.99; and those in the safe zone, with a score above 2.99 and no financial distress.

The model used in the study was adapted from the study conducted by Imade (2021) which modelled the effect of audit quality attributes on Altman Z-Score thus:

$$(\text{Altman Z-Score})_{it} = \beta_0 + \beta_1(\text{AudFsize})_{it} + \beta_2(\text{AudTen})_{it} + \beta_3(\text{AudFee})_{it} + \beta_4(\text{Joint Audit})_{it} + \beta_5(\text{Audit Lag})_{it} + \pi_{it} \quad (1)$$

The model above was modified by removing Audit Lag and Joint Audit. Thus, the modified model used in the study is stated below as:

$$Z\_Score_{it} = \beta_0 + \beta_1 AFE_{it} + \beta_2 AFS_{it} + \beta_3 AFT_{it} + \varepsilon_{it} \dots \dots \dots 2$$

Where,

- $Z\_Score_{it}$  = Altman Z-Score for firm i in year t
- $AFE_{it}$  = Audit Fee for firm i in year t
- $AFS_{it}$  = Audit Firm Size for firm i in year t
- $AFT_{it}$  = Audit Firm Tenure for firm i in year t

$\beta_{1-3}$  = Coefficient of predictors

$\beta_0$  = Constant

$\varepsilon$  = Error term

In this study, the descriptive statistical characteristics of the data were analyzed using measures such as the mean, standard deviation, minimum, and maximum values. This information was used to gain insights into the central tendencies, variability, and ranges of the data. In addition to descriptive analysis, the study employed ordinary regression method to test the hypotheses. This approach was chosen because it helps to determine the relationship between the independent and dependent variables of interest. The results of the regression analysis were used to make inferences about the population from which the sample was drawn. Specifically, the coefficients and significance levels of the regression model were examined to determine the strength and direction of the relationship between the variables.

#### 4.0 DATA ANALYSIS

The data for the study were collected from the financial statements of the selected consumer goods firms from 2012 to 2021 accounting years. **Table 4.1** below shows the descriptive analysis of the variables.

**Table 4.1 Descriptive Statistics**

	<b>Z_Score</b>	<b>AFE (₦'000)</b>	<b>AFS</b>	<b>AFT</b>
Mean	0.704827	34844.63	0.781250	0.631250
Maximum	17.63356	339590.0	1.000000	1.000000
Minimum	-78.38056	1500.000	0.000000	0.000000
Std. Dev.	12.20661	43990.99	0.414697	0.483981
Skewness	-4.412932	3.895052	-1.360672	-0.544080
Kurtosis	24.53864	21.85593	2.851429	1.296023
Jarque-Bera	3612.060	2774.879	49.51859	27.25086
Probability	0.000000	0.000000	0.000000	0.000001
Observations	160	160	160	160

*Source: Eviews 10 Analysis Output (2023)*

Table 4.1 presents the descriptive statistics of the variables used in the study. The study aimed to determine the effect of audit firm physiognomies on corporate failure of listed consumer goods firms in Nigeria, specifically the impact of audit fee, audit firm size, and audit firm tenure on Altman's Z-score of listed consumer goods firms in Nigeria. The mean value of Altman's Z-score for the listed consumer goods firms in Nigeria is 0.70, with a standard deviation of 12.21. The maximum and minimum values of Altman's Z-score are 17.63 and -78.38, respectively. The negative skewness value (-4.41) indicates that the distribution is skewed to the left, implying that most firms have lower Z-scores. The positive kurtosis value (24.54) suggests that the distribution is heavy-tailed, with a high probability of extreme values.

The mean audit fee (AFE) is ₦34,844,630, with a standard deviation of ₦43,990,990. The minimum and maximum values of AFE are ₦1,500,000 and ₦339,590,000, respectively. The positive skewness value (3.90) indicates that the distribution is skewed to the right, implying that most firms pay lower audit fees. The positive kurtosis value (21.86) suggests that the distribution is heavy-tailed, with a high probability of extreme values.

The mean audit firm size (AFS) is 0.78, with a standard deviation of 0.41. The minimum and maximum values of AFS are 0.00 and 1.00, respectively. The negative skewness value (-1.36) indicates that the distribution is skewed to the left, implying that most audit firms are smaller in size. The positive kurtosis value (2.85) suggests that the distribution is slightly heavy-tailed, with a moderate probability of extreme values.

The mean audit firm tenure (AFT) is 0.63, with a standard deviation of 0.48. The minimum and maximum values of AFT are 0.00 and 1.00, respectively. The negative skewness value (-0.54) indicates that the distribution is slightly skewed to the left, implying that most audit firms have shorter tenures. The positive kurtosis value (1.30) suggests that the distribution is slightly heavy-tailed, with a moderate probability of extreme values.

#### 4.1 Test of Hypotheses

**Table 4.2 OLS Regression Analysis**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Log(AFE)	12.64989	2.223138	5.690105	0.0000
AFS	6.713711	2.269662	2.958023	0.0036
AFT	-2.726424	1.609736	-1.693708	0.0923
C	-57.77477	8.837370	-6.537552	0.0000
R-squared	0.371608	Mean dependent var		0.704827
Adjusted R-squared	0.359524	S.D. dependent var		12.20661
S.E. of regression	9.768919	Akaike info criterion		7.420971
Sum squared resid	14887.36	Schwarz criterion		7.497850
Log likelihood	-589.6777	Hannan-Quinn criter.		7.452189
F-statistic	30.75095	Durbin-Watson stat		0.692253
Prob(F-statistic)	0.000000			

*Source: Eviews 10 Analysis Output (2023)*

The study conducted a regression analysis to determine the effect of three audit firm physiognomies, namely log of audit fee (Log(AFE)), audit firm size (AFS), and audit firm tenure (AFT), on Altman's Z-score of listed consumer goods firms in Nigeria. The R-squared value of the regression analysis is 0.371608, which indicates that the independent variables (Log(AFE), AFS, and AFT) explain 37.16% of the variation in Altman's Z-score. The adjusted R-squared value is 0.359524, which takes into account the number of independent variables in the model.

The F-statistic is 30.75095, with a corresponding p-value of 0.000000, indicating that the overall model is statistically significant at the 5% level. Therefore, the regression results

suggest that audit fee and audit firm size have a significant effect on corporate failure, while audit firm tenure does not have a significant effect on corporate failure. The coefficient of the constant (C) is -57.77477, which represents the intercept of the regression line. The coefficient is statistically significant at the 5% level (p-value = 0.0000), indicating that the intercept is significantly different from zero.

#### **4.2.1 Test of Hypothesis I**

1) Larger audit fee significantly helps to mitigate corporate failure.

The coefficient of Log(AFE) is 12.64989, which indicates that there is a positive relationship between the logarithm of audit fee and Altman's Z-score. The coefficient is statistically significant at the 5% level (p-value = 0.0000), indicating that the effect of audit fee on the likelihood of corporate failure is significant. Specifically, the coefficient suggests that a one percent increase in audit fee leads to a 12.64989 unit increase in Altman's Z-score. More positive values of Altman's Z-score mean that the likelihood of corporate failure is reducing. This is to say that higher audit fees reduce the likelihood of corporate failure. In conclusion, a larger audit fee significantly helps to mitigate corporate failure (p-value = 0.0000).

#### **4.2.2 Test of Hypothesis II**

2) Larger audit firm size significantly helps to mitigate corporate failure.

The coefficient of AFS is 6.713711, which indicates that there is a positive relationship between audit firm size and Altman's Z-score. The coefficient is statistically significant at the 5% level (p-value = 0.0036), indicating that the effect of audit firm size on corporate failure is significant. Specifically, the coefficient suggests that a one-unit increase in audit firm size leads to a 6.713711 unit increase in Altman's Z-score. More positive values of Altman's Z-score mean that the likelihood of corporate failure is reducing. This is to say that higher audit firm size reduces the likelihood of corporate failure. Therefore, a larger audit firm size significantly helps to mitigate corporate failure (p-value = 0.0036).

#### **4.2.3 Test of Hypothesis III**

3) Higher audit firm tenure will worsen the likelihood of corporate failure.

The coefficient of AFT is -2.726424, which indicates that there is a negative relationship between audit firm tenure and Altman's Z-score. However, the coefficient is not statistically significant at the 5% level (p-value = 0.0923), indicating that the negative effect of audit firm tenure on corporate failure is not significant. More negative values of Altman's Z-score mean that the likelihood of corporate failure is increasing. This is to say that lengthier audit firm tenure increases the likelihood of corporate failure. In conclusion, a higher audit firm tenure will worsen the likelihood of corporate failure although not significantly (p-value = 0.0923).

### **4.3 Discussion of Findings**

The findings suggest that audit-related factors influence the likelihood of corporate failure among listed consumer goods firms in Nigeria. Specifically, the positive effect of audit fees on Altman's Z-score indicates that higher audit fees correlate with a lower probability of corporate failure. This aligns with the idea that higher audit fees can enhance the quality of audit services, providing more reliable information for decision-making and reducing the potential for

fraudulent activities or financial misstatements. Consequently, firms investing more in high-quality audit services may be better equipped to avoid financial distress. However, Chang and Hwang (2020) reported contrary results, noting negative effects of higher audit fees on Altman's Z-score.

Additionally, the positive effect of audit firm size on Altman's Z-score indicates that larger audit firms are associated with a lower likelihood of corporate failure. This may be attributed to larger firms having more resources and expertise to conduct thorough and effective audits. Furthermore, larger audit firms are often more reputable and trusted by stakeholders, which enhances confidence in the accuracy of financial statements. Thus, companies engaging larger audit firms may be perceived as more financially stable, reducing the likelihood of corporate failure. This finding contrasts with those of Imade (2021).

Conversely, the negative effect of audit firm tenure on Altman's Z-score suggests that longer audit firm tenure increases the likelihood of corporate failure. This may be due to a potential loss of independence and objectivity over time, as well as the risk of familiarity leading to complacency and overlooking potential risks or misstatements. Therefore, it may be beneficial for companies to periodically rotate their audit firms to maintain independence and objectivity, although the effect is not statistically significant. Similar findings were reported by Imade (2021) and Chang and Hwang (2020), who also found that longer audit firm tenure negatively affects Altman's Z-score.

## 5.0 CONCLUSION AND RECOMMENDATIONS

The importance of audit-related factors cannot be overstated when it comes to the financial stability of any company. These factors play a critical role in ensuring the accuracy of financial statements and reducing the potential for fraudulent activities or financial misstatements. The findings of the study indicate that audit fees and audit firm size are important audit-related factors that can impact the likelihood of corporate failure for listed consumer goods firms in Nigeria. One of the main implications of the study is that companies that invest in high-quality audit services are better positioned to avoid financial distress. This is because higher audit fees can lead to a higher quality of audit services, which can provide more reliable information for decision-making. A high-quality audit can help companies to identify potential risks and take necessary measures to mitigate them, thereby reducing the likelihood of financial distress or corporate failure. Companies that are willing to invest more in high-quality audit services are likely to have a better understanding of their financial position and are more likely to be able to make informed business decisions. Another important implication of the study is that engaging reputable and experienced audit firms can also help companies to avoid financial distress. Larger audit firms have more resources and expertise to conduct a more thorough and effective audit, which can increase the accuracy and reliability of financial statements. Additionally, larger audit firms are often more trusted by stakeholders, which can help to increase confidence in the accuracy of financial reporting. Companies that engage reputable and experienced audit firms are likely to be perceived as more financially stable, reducing the likelihood of corporate failure.

Prolonged audit firm tenure can lead to a loss of independence and objectivity over time, as well as the risk of familiarity leading to complacency and overlooking potential risks or misstatements. Therefore, it may be beneficial for companies to periodically rotate their audit

firms to ensure that independence and objectivity are maintained since periodic rotation of audit firms helps to mitigate the risks associated with prolonged audit firm tenure. Based on the findings, the following recommendations are made:

1. Firms in Nigeria should consider investing in high-quality audits, even if it means incurring higher audit fees which can help to enhance the accuracy and credibility of their financial statements, thereby fostering greater investor confidence and securing long-term financial stability.
2. Firms in Nigeria should consider engaging larger audit firms, as they have a significant positive effect on Altman's Z-score. This may be due to the fact that larger audit firms have more resources and experience to conduct more thorough audits.
3. While audit firm tenure did not show a significant effect on Altman's Z-score, consumer goods firms in Nigeria should still consider rotating their audit firms periodically to ensure independence and objectivity in the audit process. This can help to avoid any potential conflicts of interest that may arise from long-term relationships with a particular audit firm.

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