AUDIT MARKET CONCENTRATION AND AUDIT QUALITY

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Abstract

This study examined Audit Market Concentration and Audit Quality of financial Service Firms in Nigeria. Specifically, the study addressed the relationship between absolute and relative audit market concentration and audit quality, which was proxied using the occurrence of accounting restatements. The population consists of the entire forty-nine (49) companies listed in the financial services sector of the Nigerian Exchange Group (NGX) for a period of ten years (2015-2024). From the analysis, the study relied on a binary logistics regression model due to the dichotomous nature of the dependent variable employed. The preliminary analysis showed that out of a total of twenty-three (23) audit firms that audited Nigerian financial services companies within the 10-year period of 2015–2024, the Big 4 audit firms amassed a total of 96% market share of audit fees. The regression result showed that absolute audit market concentration is linked to fewer accounting restatements (higher audit quality). On the other hand, the control variables of size and ROA, were found not statistically significant. The study also recommends that Financial Reporting Council of Nigeria should consider the stipulation of an alternative auditor appointment or selection process for listed companies beyond just the audit committees.

Keywords: Audit Market Concentration Abnormal audit fees, Restatements, audit opinions, Joint audit

Jel Classification: L11, M4, M41, M42

1. INTRODUCTION

Prominent among the audit-related issues is that of audit market concentration. The reason being that conventional audit literature attributes the quality of an audit exercise to the category of the external auditing firm (whether Big4 or non-Big4). As a result, most modern auditing research has used the 'Big4' as a measure of audit quality (Ilaboya & Ohiokha, 2014). Despite the convincing argument that big audit firms provide quality service because they have established brand reputation and a strong incentive to maintain it by providing high-quality

audits, situations where corporate entities audited by large audit firms suddenly fail immediately after such audits (such as Arthur Anderson for Enron in 2001 and PricewaterhouseCoopers for Cadbury Plc in 2006), as observed by Daferighe and Emem (2021), have further ignited the issue of audit market concentration and how it affects audit quality. According to Pan, Shroff, and Zhang (2021), understanding how audit market competition affects audit quality is of significant interest to all market participants (academics, practitioners, and regulators), with substantial policy and capital market implications. Azizkhani, Sami, Amirkhani, and Monroe (2022) also opined that increased competition in audit markets in developing economies generates audit fee pressure, which negatively affects audit quality. On the other hand, while the recently published U.S. study of Brockbank. et, al, (2023) found that analyst forecasts are more accurate and less dispersed when audit markets are more concentrated, meaning that audit market concentration leads to improved audit quality, the Nigerian study by Aggreh (2019) found a non-significant relationship between audit market concentration and the quality of audit, while the audit concentration ratio for Big4 reveals a negative, non-significant relationship. Consequently, further research on the topic is considered necessary due to the inconsistent nature of the results of previous studies. Thus, the need for this study

2. LITERATURE REVIEW

2.1 CONCEPTUAL REVIEW

2.1.1 CONCEPT OF AUDIT QUALITY

There have been several attempts, both within academic circles and professional groups, to provide a comprehensive definition of audit quality. The International Federation of Accountants (IFAC, 2019), for instance, highlighted the ideas of audit quality in the international standard on quality control at the level of professional organizations. According to the statement, "the audit firm's objective is to establish and maintain a system of quality control to give it reasonable assurance that the firm and its employees comply with applicable legal and regulatory requirements as well as professional standards, and also that reports issued by the firm or engagement partners are appropriate in the circumstances" (IFAC, 2019). This statement suggests that, according to IFAC's perspective, quality encompasses adherence to professional standards as well as legal and regulatory requirements. Similarly, the International Auditing and Assurance Standards Board (IAASB, 2020) underscored the objective of enhancing the degree of confidence among intended consumers in the financial statements within its framework for audit quality. To provide an assessment about the conformity of the financial statements, in all significant aspects, with the relevant financial reporting system, it is imperative to accumulate an adequate and acceptable body of audit evidence. DeAngelo (1981) posits that audit quality refers to the collective probability, as seen by the market, of an auditor successfully identifying and disclosing any irregularities present within the financial statements. The audit quality may be defined as the probability that the auditor will detect and disclose an error inside the client's accounting system.

However, DeAngelo's (1981) idea of audit quality ignores institutional variables that can alter the function of auditing, such as the legal system or government interference. According to Titman and Trueman (1986), the quality of the audit depends on the auditors' information. Beyond a commitment to independence and professional proficiency, auditing services uphold a wider range of values.

2.1.2. CONCEPT OF AUDIT MARKET CONCENTRATION

Audit market concentration is the size of market share a particular audit firm control. An important component of audit firms' competitiveness is the audit market's structure. According to Dubaere (2008), market concentration can be considered a strategic competitive advantage of an organisation, provided the client is offered a higher-valued benefit. Any audit firm chosen will be determined by their standing and the calibre of audit services they have provided in the past (Gunn, Kawada, & Michas 2019). The current market structure for the provision of audit services to public-interest corporations is a major concern among stakeholders. This could result in "monopolistic pricing, a drop in the quality of audits and the services offered by audit firms, a decrease in the stability of capital markets and investor trust, and a likely failure on the part of the audit firm (Ayoola et al., 2019). Globally, the Big 4 audit firms are pushing out smaller and medium-sized audit firms from the audit of capital market-oriented organizations. As a result, the Big4 audit companies experience enormous competitive disadvantages and escalating oligopolistic rents (Eguasa & Urhoghide, 2017). In general, the market is made up of certain businesses that operate there and stay there for a long time, while other businesses continually come and go. Other factors contributing to the audit market's consolidation include the forced retirement of audit firms, internal and external growth (mergers), the Big 4 audit firms' emphasis on brand promotion and product differentiation, and investors' demand for a prompt release of certified account (Velte & Stiglbauer, 2012).

There are three primary factors that contribute to alterations in market concentration: voluntary realignments, shifts in the customer base, and changes in the supplier pool. There are several reasons that might contribute to the occurrence of realignments. The top six reasons listed by Ayoola et al. (2019) and Beattie, Goodacre, and Fearnley (2003) are high audit fees, dissatisfaction with audit quality (in terms of the auditor's ability to detect problems), changes in company top management, the need for group auditor rationalisation, the need for a big audit firm, and a merger with or takeover of another company. However, in the event if there exists an undisclosed inclination for the foremost providers, these reconfigurations will gradually result in an increase in market consolidation. According to Farag (2007), the departure of leading providers from the market due to mergers or collapses might result in notable concentration increases. The concentration of the market is influenced by the availability of audit companies and their diverse sizes (Dubaere, 2008). The concept of heterogeneity has been utilised to characterise the measure of audit market concentration in previous empirical studies. The

consideration of the market share of specific audit businesses is done by employing absolute and relative concentration characteristics.

2.1.3. ABSOLUTE AUDIT MARKET CONCENTRATION

Absolute audit market concentration refers to the level at which a small number of audit firms dominate a significant portion of the audit market (Aggreh, 2019). According to Eshleman and Lawson (2017), the degree of competition in audit markets is a primary topic in empirical auditing research. The auditing literature encompasses numerous theoretical perspectives regarding the influence of audit market concentration on audit outcomes. For instance, Newton et al. (2013) contend that a higher level of concentration, or reduced competition, in the audit market may not affect audit quality or might potentially result in improved audit quality. In a highly competitive environment for audit clients, an audit firm is more likely to comply with client requests due to the apprehension of losing the business to a rival audit firm. On the other hand, when there is a higher concentration of audit service providers, clients have less power to threaten dismissal and look for a more favourable audit opinion, which is known as opinion shopping (Newton, Persellin, Wang, & Wilkins, 2016). Boone, Khurana, and Raman (2012) presented a contrasting perspective, suggesting that audit market concentration may actually enhance audit quality as opposed to diminishing it. Boone et al. (2012) went further to explain that auditor concentration has the potential to enhance audit quality by reducing the pressure to satisfy the client and by reinforcing the auditor's professional ethics and dedication to the independent oversight role. Specifically, when a corporation (especially a large one) selects a less diverse auditor, it creates a more focused setting that can reduce the auditor's expenses in providing accurate reports. This is because there is a smaller chance of the client changing auditors in the subsequent year due to low competition. In other words, auditors are less likely to have a negotiation mindset when they are less concerned about losing their job to a more agreeable auditor (Boone et al., 2012; Brockbank et al., 2023). This means they are less inclined to accommodate the client's desire to manipulate reported earnings in order to maintain the stock price (Boone et al., 2012). From this standpoint, a greater concentration could be linked to improved audit quality since it allows the auditor to uphold independence and hence have a stronger ability to resist and restrict client-influenced earnings manipulations.

In addition, Eshleman and Lawson (2017) contend that reduced competition enables auditors to allocate greater time and effort to each individual audit engagement. Concentrated markets increase the likelihood of clients choosing a Big 4 or specialist auditor, which are both linked to audits of higher quality (Behn et al., 2008; DeFond and Zhang, 2014). Therefore, a higher level of concentration in audit markets has the potential to enhance audit quality by promoting greater auditor independence, exertion, or competence. According to Kallapur, Sankaraguruswamy, and Zang (2010), Newton et al. (2013), and Eshleman & Lawson (2017), several studies have found that audit quality is higher in markets with greater concentration.

This study employs audit fees as a metric to assess the concentration of the audit market, utilising an MSA-level Herfindahl Index measure derived from audit fees, as previously explored in studies conducted by Kallapur et al. (2010), Boone et al. (2012), and Newton et al. (2013). The Hirschman-Herfindahl Index (HH-index) is a measure of audit market concentration that is calculated by comparing the market share of each audit company to the whole market, using audit fees as the basis for calculation. The aggregate audit fees received by all audit companies during the analysed timeframe are compared to the total audit fees disbursed to each individual audit firm within the same period. The concentration ratio is calculated by multiplying the total audit fees for the period by the amount charged and then scaling the result by 100. A greater value signifies a more densely concentrated local audit market.

2.1.4. RELATIVE AUDIT MARKET CONCENTRATION

According to Song (2021), the relative audit market concentration refers to the proportion of the Big4 audit firms compared to the non-Big4 firms in a specific market and time frame. In line with the traditional audit literature, the type of external auditing company specifically, whether it is a Big4 or non-Big4 firm determines the quality of an audit (Kallapur et al. 2010). The auditing literature expresses worry that the consolidation of audit services may result in diminished competition. Eshleman and Lawson (2017) propose that a restricted range of options for choosing an auditor diminishes competition among auditors, potentially leading to negative consequences for the quality of audits. According to traditional economic theory, decreased competition leads to a decline in the quality of the product or service (Berger & Hannan 1989; Weiss 1989). Within the realm of audit services, this implies that a decrease in competition has an adverse effect on the quality of the audit process. This is because the dominant auditor becomes entrenched, compromising their independence and reducing the motivation for innovative auditing practices. Additionally, audit clients have limited options to choose from.

The premise of this study posits that a decrease in competition resulting from market concentration in the audit industry may result in higher audit fees. Due to the dearth of smaller audit suppliers who can provide competitive alternatives, the Big 4 firms' dominance of the Nigerian audit market is considered the best environment for detecting such a phenomenon. Hence, smaller audit firms outside of the Big 4 face challenges in competing for large and intricate clients in the audit market due to their limited resources and networks required to carry out such engagements. The perspective on the market aligns with that of Kinney, Palmrose, and Scholz (2004), who assert that the audit market for smaller companies exhibits greater competitiveness compared to the market for bigger organisations. Hence, we contend that a higher level of concentration is more likely to result in elevated audit fees within the specific sector of the market where the Big 4 companies are active, commonly referred to as the "Big 4 audit market." This study specifically examines

the concentration of the Big 4 auditors inside the Nigerian financial services sector, particularly in relation to relatively complicated clients.

2.2. EMPIRICAL REVIEW

In a study conducted by Ayoola (2022), an examination was undertaken to investigate the correlation between audit fees and audit quality within the context of commercial banks in Nigeria. By including audit seasonality as a mediating variable, a negative correlation was shown between audit fees and audit quality. The researchers also discovered that both before to and during the implementation of the Sarbanes-Oxley Act (SOX), there was a prevailing belief that the economic climate, rather than the reputational concerns of certified public accountants, served as a more reliable indicator of an external auditor's behaviour. In their study, Mbatuegwu, Musa, and Yoko (2022) investigated the correlation between the financial knowledge of audit committees and the quality of audits inside both listed and gas firms in Nigeria. The study focused on a time frame spanning from 2015 to 2019, with a population consisting of ten (10) companies that were listed on the Nigeria Exchange Group. The researchers discovered that there is a robust and statistically significant interaction between the variables under investigation. There exists a necessity for heightened block-holder percentages of ownership, since such a phenomenon has the potential to yield favourable transformations within corporations. Dijeh, Ofor, and Odubuasi (2022) conducted a study. The present study examined the correlation between the financial reporting standards used by firms operating in the Nigerian insurance market and the features of their audit processes. The study aimed to examine five objectives: the impact of audit type, audit tenure, joint audit, industry-specific audit, and audit fee on financial reporting quality, as evaluated by discretionary accruals using the modified Jones model. The research approach employed in this study was ex post facto, which required the acquisition of secondary data from the annual reports of twenty-two insurance firms that were selected as a sample. The data collected covered the fiscal years from 2011 to 2020. The researchers reached the determination that the sort of audit conducted has a beneficial effect on the quality of financial reporting, although the influence is not deemed significant. Another conclusion suggests that the audit charge has a statistically significant adverse effect on the quality of financial reporting, with a significance level of 1%. However, the financial reporting quality of the insurance businesses listed on the stock exchange is shown to be adversely affected by factors such as the length of audit tenure, the presence of joint audits, and the use of industry-specific audits. However, it should be noted that these impacts are not statistically significant. This statement emphasises the importance of regulatory agencies in reinforcing the practise of audit firms adhering to professional criteria for determining audit fees in all audit engagements.

The study conducted by Ashraf.et al., (2020) investigated the influence of audit quality features on the return on assets of publicly listed manufacturing companies in Nigeria. The research employed an ex-post facto research approach to

analyse secondary data from 24 out of the 80 manufacturing businesses listed on the Nigerian Exchange Group. The data covered the period from 2006 to 2016. The researchers found that there was a positive and statistically significant relationship between the size of the audit company and the return on assets of listed manufacturing businesses in Nigeria, along with other factors. The researchers reached the determination that some dimensions of audit quality exert influence on the return on assets of publicly traded manufacturing companies in Nigeria. Daferighe and George (2020), the issue of providing accurate and trustworthy financial reports has gained significant attention considering the ongoing corporate scandals observed in both developed and developing nations. The prevalence of corporate financial scandals continues to increase in Nigeria and other countries globally, despite concerns expressed by authorities and stakeholders on the preservation of financial reporting standards. The present study aimed to assess the financial reporting quality of manufacturing businesses listed in Nigeria over the period from 2011 to 2015. Additionally, the study examined the potential impact of audit firm characteristics on the financial reporting quality. The research design employed in this study was ex-post facto. The data were collected from a sample of sixteen corporations by analysing their published annual reports, accounts, and accompanying financial statement notes. The data underwent analysis by various regression analyses, and the submitted hypotheses were subjected to testing. The findings of the study revealed a significant relationship between auditor fees and the quality of financial reporting among publicly traded industrial firms in Nigeria. Nevertheless, empirical evidence has demonstrated that the dimensions of the audit firm and the duration of the audit process have minimal impact on the quality of financial reporting inside Nigerian manufacturing firms. Hence, it is recommended that manufacturing organisations provide a conducive environment that ensures auditors' adherence to standard auditing practises and timely communication of audit findings to stakeholders, hence promoting the adoption of sound decision-making based on reliable information.

2.3. THEORETICAL REVIEW

2.3.1. THEORY OF INSPIRED CONFIDENCE

Theodore Limperg (1926) developed the Theory of Inspired Confidence, which later became known as the Theory of Rational Expectations. The theory contends that the auditor's technical expertise, independence, and professional competence determine the value of the auditor's report. In general, this idea is non-static and assumes that as the business community changes, so will the demands it places on the role of the auditors (Millichamp & Taylor, 2012). Limperg believed that the auditor's job should be guided by the users' realistic expectations for audit reports and that the auditor should not let those expectations down. On the other hand, auditors should not in-still unrealistically high expectations in the auditee. The perceived societal value of an audit is posited to influence the utility of the auditor's view. Notwithstanding valid concerns, a corporation would allocate funds towards

conducting an audit due to its essential role in ensuring the reliability of financial statements. This, in turn, enables lenders and investors to place reliance on such reports when making investment choices. The level of trust that society places in the audit process diminishes as the significance of the audit escalates, particularly when the audit report is modified in a manner that selectively caters to the comprehension of some user groups while neglecting others. Limperg thinks that auditors have a socially beneficial role by aiding society in meeting its demands for precise financial data. The auditor is required to fulfil the realistic expectations of a knowledgeable non-expert, while ensuring that these expectations are not excessively elevated. As a result, the auditor's responsibility to society goes beyond serving as a shareholder watchdog (Millichamp & Taylor, 2012).

2.3.2. THE AGENCY THEORY

The fundamental basis of agency theory is in the connection established between the principle and the agent. The utilisation of agency theory in modern businesses is grounded in the separation between ownership and management. In contemporary organisational settings, the distribution of ownership is commonly characterised by widespread dispersion among shareholders, who generally assume a passive role in the operational aspects of their own enterprises. Under such situations, a designated representative is selected to oversee the day-to-day operations of the firm. The existence of conflicts of interest between agents and principals, resulting from the separation of ownership and control, leads to increased costs associated with resolving these conflicts (Jensen & Meckling, 1976; Eisenhardt, 1989). The primary contention supporting agency theory posits that managers, rather than prioritising shareholders' interests and the maximisation of value, are commonly driven by self-interest and want to promote their own personal profits. Hence, the fundamental challenge proposed by agency theory is to ensure that managers prioritise the interests of shareholders alongside their own. Eisenhardt (1989) posits that the emergence of agency concerns occurs when there is a divergence in objectives between the principal and agent, along with the inherent challenges and costs associated with the principal's ability to effectively monitor and ascertain the agent's real actions. The lack of oversight by principals on the activities of agents frequently leads to the emergence of contentious situations (Jensen & Meckling, 1976). In essence, agency theory recognises the propensity of agents, namely the directors or managers of a corporation, to prioritise their own interests over the interests of their employers and shareholders.

The motivation for the introduction of audits, as noted by Watts and Zimmerman (1978), was primarily driven by the objective of reducing agency costs and mitigating conflicts of interest among various stakeholders inside the organisation, rather than being mandated by governmental authorities. Agency theory posits that the financial indenture stipulates obligations for the agent, who is typically the management, to fulfil certain responsibilities on behalf of the principal, who are the shareholders. The principal means by which a company's management

are monitored is through the independent inspection of its financial records conducted by an audit firm. For this examination process to achieve success, it is imperative that a set of audit conditions are fulfilled. Initially, it is imperative that the monitoring responsibility be assigned to an impartial auditor who had no financial stake in the organisation. Furthermore, it is imperative that the guiding principles of the audit establish a robust foundation to in still trust and assurance in the detection of fraud or significant misstatements. According to Culpan and Trussel (2005), it is imperative for the agent to maintain precise and current accounting systems as well as ensure the accuracy of financial reports. The application of agency theory might provide more elucidation on the supply side of the audit market. The potential for the auditor to identify issues within the financial accounts, as well as their inclination to disclose these deficiencies despite the auditee's objections, significantly impact the extent to which an audit benefits all involved parties. Multiple studies have provided evidence on the financial implications of reputation loss, indicating that a decline in reputation leads to a loss of public trust in the auditing profession and a subsequent fall in client base (Hayes et al., 2005).

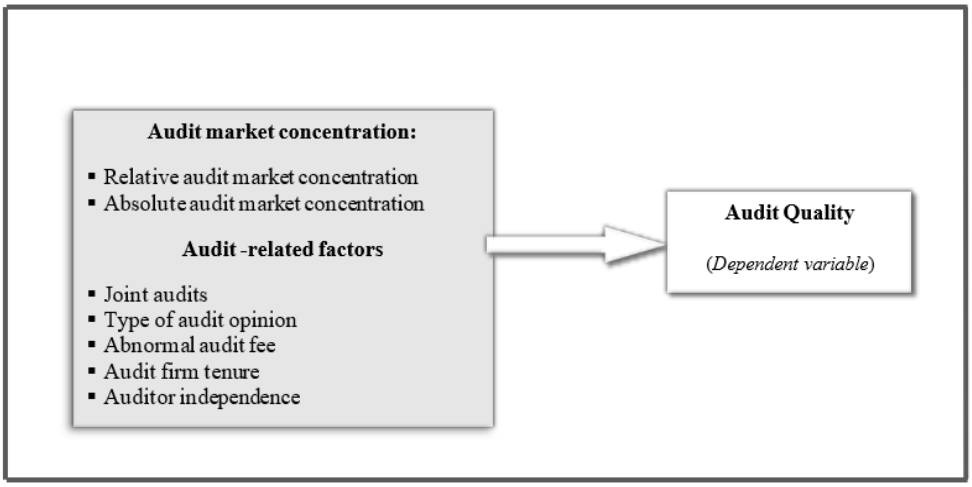
The notion posits that auditing serves to alleviate the adverse consequences arising from the separation of ownership and control (Jensen & Meckling, 1976). The presence of competition and legislation poses a challenge to the principle of separation of ownership and control inside the audit environment. The presence of market competition imposes constraints on the maximum level of auditor fees that may be charged by customers of audit companies. The market provides other sources of demand that contribute to the audit firm's exposure to quitting threats. Furthermore, as per the Generally Accepted Auditing Standards, which delineate fundamental audit methods, certain requirements need the acquisition of a prescribed minimal quantity of auditing (Antle & Demski, 1991). According to agency theory, external auditing is considered the most pivotal monitoring instrument since it effectively mitigates agency costs and effectively addresses conflicts of interest. The purpose of this study is to examine the impact of competent external audits on the mitigation of agency costs resulting from opportunistic conduct induced by management. These monitors perform their duties on behalf of the shareholders. Hence, the presence of an independent and high-quality audit might potentially limit the ability of management to prioritise their own interests above those of the owners. Consequently, it is plausible that principals may have enhanced financial outcomes (Watts & Zimmerman, 1983). Consequently, the agency relationship provides a framework for examining the concentration of the audit market and the quality of audits conducted by listed financial institutions in Nigeria, considering the attributes of the auditors involved.

3. METHODOLOGY

The study adopts an ex-post facto research design. This design is suitable for this study because the data are a combination of time series and cross-sectional. Our population of the study comprises forty-nine (49) financial Service companies listed

on the top tier of the Nigerian Exchange Group (NGX) as of December 2024. The financial sector is considered suitable for the purpose of this study because most of the issues related to audit failures and corporate financial scandals, in the Nigerian context, were more witnessed in the financial sector than any other sector in Nigeria. The study employed secondary data sourced from various annual reports of listed financial Service companies for the period under review (2015-2024). The study considers the principal-agent theory, as popularised by Jensen and Meckling (1976), as the most suitable for developing the theoretical framework of the model.

Table 1: *Research Framework*



Source: Researcher's Conceptualisation (2024)

Table 1 shows a diagram of how the audit quality proxy is likely to be linked to the independent variables. In addition to the chosen audit-practice parameters, the agency theory provides the right theoretical basis for analysing the audit market concentration and audit quality of quoted financial companies in Nigeria. Following Aggreh (2019), the agency theory can be used to clarify the audit market's supply side since it is rooted in explaining the principal-agent's responsibilities in the agency relationship due to the separation of ownership and control. The auditor's role in such a relationship is crucial to protect the wealth and interests of the fund owners (Daferighe & Emem, 2020). Going by the above, it is practically contestable to project that concentration in the audit market can be a function (either increasing or decreasing function) of equilibrium audit quality. Against the above backdrop, the study predicts a functional relationship between the five variables linked to the auditing profession and audit quality. Therefore, in an adaptation of Aggreh's (2019) model, the following functional model is created:

Audit fees = f (Absolute and relative audit market concentration) ……. (1)

Prior studies have also included some firm specific characteristics that could as well influence the quality of an audit assignment. Following Aggreh (2019) and

Gunn et al. (2019), the study includes firm size, profitability and industry type as control variables. The econometric form of the adapted binary panel regression models, with the three control variables, are specified thus:

$$P_i logit AUDQ(\mathrm{p}/1-\mathrm{p}) = e\alpha + \beta_1 * HHI + \beta_2 * CONCEN + \beta_3 * CONTROLS + \mu_i \text{ ------(1)}$$

Introducing the three control variables, we have:

$$P_i\,(AUDQ)1-\pi(x) = e\alpha + \beta_1 HHI + \beta_2 CONCEN + \beta_3 SIZE + \beta_4 ROA + \beta_5 BIG4]\} \text{ --------(2)}$$

Where: p = represents the probability of the financial statement being restated (i.e., the selected proxy for AUDQ, the dependent variable), CONCEN = Relative Audit Market Concentration, HHI = Absolute Audit Market Concentration, SIZE = Client size, ROA = Firm profitability, INDT = Industry (sub-sector) type.

Table 2: *Operationalisation of Variables*

Variables	Notation	Type	Measurements	Source	Apriori sign
Audit quality	AUDQ	Dependent	Dummy variable of 1 if there is earnings restatement in firm annual report, 0 otherwise	Francis, Michas, and Yu (2013); Kinney, Palmrose and Scholz (2004)	-nil-
Absolute Audit Market Concentration	HHI	Independent	Hirschman-Herfindahl Index (HHI)	Brockbank et al. (2023); Eshleman and Lawson (2017)	_
Relative Audit Market Concentration	CONCEN	Independent	Concentration ratio for Big4	Eshleman and Lawson (2017); Aggreh (2019)	+
Firm size	SIZE	Control	Natural log of total assets	Ilaboya and Ohiokha (2014)	+
Firm profitability	ROA	Control	Net income scaled by total assets	Gunn et al. (2019)	+
Industry (sub-sector) type	INDT	Control	Dummy of 1 for commercial banks, 0 for other financial institutions and Insurance firms	Gunn et al. (2019)	_
Audit firm size	BIG4	Control	Dummy variable of 1 for firms audited by the Big4, 0 otherwise	Alhadab (2018)	_

Source: Researcher's Compilation (2024)

4. DATA PRESENTATION AND ANALYSES

Table 3: *Descriptive statistics*

	AUDQ (Dummy)	HHI (value)	CONCEN (%)	SIZE (₦'000)	ROA (ratio)	BIG4 (No)
Mean	0.138	810.77	14.804	921,709,605	0.005	0.637
Median	0.000	8.9910	9.2796	28,604,609	0.019	1.000

Maximum	1.000	13251.4	47.080	14,998,401,000	1.131	1.000
Minimum	0.000	0.00065	0.0025	382130.0	-0.691	0.000
Std. Dev.	0.345	2104.17	15.114	2.15E+09	0.111	0.481
Skewness	2.096	3.15969	0.9726	3.395414	-0.461	-0.570
Kurtosis	5.394	13.2935	3.0272	15.92486	35.97	1.325
Jarque-Bera	449.7	2814.48	73.006	4112.353	209.4	79.21
Probability	0.000	0.000	0.000	0.000	0.000	0.000
Observations	490	490	490	490	490	490

Source: Researcher's computation (2024)

From Table 3. it can be observed that the variable AUDQ showed a mean value of 0.138, which means that within the 10-year period of 2015–2024, about 14% of the audited financial reports contained prior-year earnings restatements. The median value of 0.00 is an indication that more than 50% of the sampled financial companies did not restate their earnings within the 10-year period covered by the study. Also, the measures of the absolute and relative audit market concentration, denoted by HHI and CONCEN, showed mean values of 810.77 (< 1,500) and 14.8 (or 0.148), respectively, which implies a moderately concentrated market. On the control variables, the mean size showed that the average size of the sampled financial companies is about ₦921.7 billion. The maximum value suggests that the largest financial company among the logs (i.e., Access Bank) has a total asset of about ₦15 trillion as of 2022, while the smallest financial company (i.e., Deap Capital Management & Trust) had a total asset of ₦382 million as of 2016. These raw total asset values were then transformed into the natural log form for the estimation and empirical tests. Also, the mean value of ROA (0.53%) suggests that the financial companies, on average, performed below par. Jewell and Mankin (2011) suggest that a ROA of about 5% is considered good performance, although the higher, the better. However, the median value of 0.019 suggests that about half of the 49 sampled financial companies have a ROA of about 2%. Also, the standard deviation of about 22.5% is an indication of the greater dominance of high-performing financial firms among the sample. On the Big4 variable, the mean value suggests that about 64% of the sampled financial companies are being audited by the large audit firms, while about 36% employ the services of the small (non-Big4) auditing firms.

Further, the Jarque-Bera statistics of each of the variables and their corresponding probability values suggest that most of the data did not follow a normal distribution. However, following the Central Limit Theorem, the departure from normality does not pose any major problems in panel data analysis (Agostini & Favero, 2012).

4.1. BIVARIATE ANALYSIS

The covariance correlation matrix approach was chosen mostly due to the presence of non-normal residuals. The study observed that the prevalence of non-normality may increase with the advancement of data collection methods, shown by the computation of two indicators of audit market concentration. These calculations resulted in the identification of considerable outliers and very large residuals. Behrend. et al. (2020), disciplines such as behavioural genetics, computational modelling, cognitive neuroscience, and managerial sciences often produce notably non-normal data. The correlation result is presented in Table 4.2 below.

Table 4: *Result of the Correlation matrix*

Correlation					
Probability	AUDQ	HHI	CONCEN	ROA	BIG4
AUDQ	1.000000				
HHI	-0.159253	1.000000			
CONCEN	0.117122	0.572053	1.000000		
	0.0121*	0.0000*	-----		
SIZE	0.124509	0.652765	0.580270		
	0.0076*	0.0000*	0.0000*		
ROA	0.008015	0.048175	0.050453	1.000000	
	0.8642	0.3036	0.2813	-----	
BIG4	-0.010224	0.285231	0.716447	0.027367	1.000000
	0.8273	0.0000*	0.0000*	0.5591	-----

Source: Eviews 10 (2024)

As shown in Table 4 the absolute concentration (HHI) and relative concentration (CONCEN) ratios of the audit market had negative correlation coefficients of -0.159 and positive correlation coefficients of 0.117. The implication of the correlation coefficient signs is that while the former (HHI) tends to move in the opposite direction with the audit quality proxy of accounting restatement, the latter (CONCEN) moves in the same direction. Also, a cursory look at their probability values (0.0006 and 0.012) shows that both are statistically significant at the 1% and 5% levels, respectively. What this means is that restatements happen less often at financial companies with absolute audit market concentrations and more often at financial companies with relative audit market concentrations. Apart from the explanatory variables, the remaining three control variables possess positive (for SIZE and ROA) and negative (for BIG4) correlation coefficients, meaning that the first two move in the same direction with the audit quality proxy, while the third tends to move in the opposite direction. However, a cursory look at their individual probability values shows that only the variable size possesses a significant probability value of 0.0076, which is statistically significant at the 1% level of confidence, while the other two (ROA and BIG4) have large probability values (0.86

and 0.83), respectively, meaning that both are not statistically significant. Hence, based on these results, it can be inferred that large financial companies are associated with a greater likelihood of restatement occurrence. Also, a cursory look at Table 4.4 suggests that there is no need to worry about the consequences of a perfect correlation since none of the coefficients (correlation coefficients) is greater than 80%, at which point the problem of collinearity may occur.

4.2. MULTIVARIATE ANALYSIS

The binary logit panel regression method was used for the estimation because the occurrence of financial restatement, which is a binary variable, was used as a proxy for the dependent variable of audit quality. The binary logistic regression uses maximum likelihood estimation (MLE) rather than ordinary least squares (OLS) to estimate the parameters. As such, it does not assume a linear relationship between the dependent variable and the independent variables, but it does assume a linear relationship between the logit of the response variable and the explanatory variables: $\text{logit}(\pi) = \beta_0 + \beta X$. The goal is to find out how changes in the audit market concentration measures and other audit-related factors are linked to changes in the chance that an earnings number that was previously reported and audited is restated.

The outcome of the binary logistic regression is presented in Table 5.

Table 5: *Result of the binary logistic regression*

Dependent Variable: AUDQ

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.266832	0.936903	-0.284802	0.7758
HHI	-0.429185	0.253565	-1.692604	0.0905*
CONCEN	0.002968	0.007183	0.413138	0.6795
JAUD	-0.055989	0.359084	-0.155923	0.8761
AOP	0.413711	0.206529	2.003649	0.0451**
ABFEE	0.413812	0.185980	2.225037	0.0261**
AUDT	0.027576	0.021527	1.280979	0.2002
AUDIND	-0.210407	0.089831	-2.342255	0.0192**
SIZE	-0.041091	0.056518	-0.727038	0.4672
ROA	0.301378	0.637611	0.472667	0.6365
BIG4	-0.546280	0.294869	-1.852619	0.0639*

McFadden R-squared	0.156901	Mean dependent var	0.136264
S.D. dependent var	0.343446	S.E. of regression	0.338862
Akaike info criterion	0.799290	Sum squared resid	50.98328
Schwarz criterion	0.898902	Log likelihood	-170.8385
Hannan-Quinn criter.	0.838533	Deviance	341.6770
Restr. Deviance	362.2916	Restr. log likelihood	-181.1458
LR statistic	20.61466	Avg. log likelihood	-0.375469
Prob (LR statistic)	0.023947		

Obs with Dep=0	393	Total obs		455
Obs with Dep=1	62			

Source: EViews 10 NB: *, **, *= significant at 1%, 5% & 10%, respectively**

Table 5. shows the outcome of the binary logit regression model as specified in the previous chapter. The McFadden R-squared value, which shows how all the explanatory variables affect the dependent variable (AUDQ), has an explanatory power of 15.7%, as shown in the table. This implies that the model has low explanatory power. The standard error of regression (0.339) is far lower than the 2.5 benchmark, showing that the observations are very close to the fitted lines. On the overall significance of the model, the LR statistics (20.61) and its corresponding probability value (p-value<0.024) are indications that the hypothesis of the statistical significance of the model cannot be rejected at the 5% level of confidence. This suggests that the included variables explained a substantial proportion of the variations in the proxy of audit quality (i.e., earning restatements) employed by the study. On the basis of the performance of the individual variables, the result shows that four (4) out of the seven (7) dimension of the independent variables (that is, HHI, AOP, ABFEE, and AUDIND) appear statistically significant owing to their probability values of 0.09, 0.045, 0.026, and 0.019, which are statistically significant at the 10%, 5%, 5%, and 5% levels of confidence, respectively. The variable Big4, as one of the control variables, is equally significant at the 10% level of significance due to the p-value of 0.064.

Going by the coefficient signs of the significant variables, the variables HHI, AUDIND, and Big4 have negative coefficients, which shows that they possess an inverse influence on the response variable of audit quality. This can be interpreted to mean that increasing changes in HHI, AUDIND, and BIG4 are associated with a lesser likelihood of restatement occurrence. In other words, going by the measure of restatement employed (1 for restatement, 0 otherwise), the financial firms with high absolute audit market concentration are 43%, with 90% confidence, more likely to be associated with a lesser likelihood of restatement, which implies high audit quality. Similarly, longer auditor tenure is associated with a lesser likelihood that restatement will occur. Also, financial firms that employ Big4 audit firms are 55% less likely to be associated with restatements, which means high audit quality. Further, the remaining two explanatory variables that are significant possess positive coefficients. The positive and robust coefficient value of AOP (0.414) and a significant z-statistic of 2.004 are indications that the probability that a given financial company restates its earnings becomes more likely when the auditor gives a qualified opinion. In other words, the issuance of a qualified audit opinion is associated with a greater (i.e., significant) prediction of the likelihood of restatement. Also, the variable ABFEE has a positive robust coefficient, which implies that financial companies that pay abnormally high audit fees are 41% more likely to be associated with financial restatements at the 5% significance level.

5. CONCLUSION AND RECOMMENDATIONS

Amid stakeholders' concerns for higher audit quality, following the massive accounting scandals that affected some high-profile companies in both developed and developing nations in the last two decades, several regulatory provisions have been put in place by different countries to ensure that audited financial reports have the needed level of assurance in satisfying the information needs of the stakeholders. In addition to these, this study has also increased the horizons of their inquiries about the possible determinants of audit quality in different jurisdictions. Key factors have been focused on the role of the auditors and auditing as a practice in explaining the drivers of audit quality. Having observed the directions already employed by most existing studies on the subject matter, as regards the measure of audit quality, the study took a drift by adopting the occurrence of accounting restatement as a proxy for audit quality. The study found justification for this measure, as the literature suggests that the restatement of prior disclosed earnings is a red flag that the financial information provided by the company is likely untrue or distorted and therefore not reliable. The study also found that absolute audit market concentration, audit opinion, abnormal audit fees, and auditor independence are the most important factors that affect the quality of the audit. Relative concentration, joint audits, and audit tenure, on the other hand, were not statistically significant. The study equally included three control variables of size, profitability, and audit firm size and found that only Big4 appeared statistically significant. As a result in the context of this study, the absolute audit market concentration, the type of audit opinion, abnormal audit fees, and auditor independence all have an equal impact on the occurrence of accounting restatements (and, by extension, audit quality). The remaining variables of joint audits, auditor tenure, firm size, and profitability were not of significant importance in the context of this study. The study also recommends as follows; that Financial Reporting Council of Nigeria (FRCN) should consider the stipulation of an alternative auditor appointment or selection process for listed companies beyond just the audit committees. This can come in the form of the involvement of institutional shareholders or significant shareholder panels and regulators. This will go a long way in realigning the existing audit market intervention initiatives. Following the outcome of the abnormal audit fees, there is a need for a limit to be set by regulators on the proportion of audit fees an audit firm can receive from a single client, depending on factors like the size and complexity of their subsidiaries. The process of data gathering showed that most of the listed financial firms, especially the non-banking financial firms, do not provide any information on the allocation of non-audit consulting services to their external auditors. Therefore, regulators should monitor and provide classification for audits from undertaking non-audit works for their audit clients and mandate all listed companies to clearly disclose any extra amount they pay as a non-audit fee in their annual reports.

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