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## **Corporate Attributes and Financial Reporting Quality of Listed Information Communication Technology Firms in Nigeria**

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### **Abstract**

The demand for high quality financial information is increasing. It has become imperative in a developing economy such as Nigeria, especially in the information communication technology (ICT) sector due to globalisation and expansion of businesses beyond the national borders. Accordingly, companies are obliged to satisfy the information needs of both local and foreign investors by providing them with relevant and comparable financial reports. The main objective of this study was to examine the effect of corporate attributes on financial reporting quality of ICT firms listed on the floor of Nigeria Exchange Group from 2013-2022. The independent variable of the study being corporate attributes was proxied by firm size, firm age, firm profitability, auditor type and assets tangibility while the dependent variable being financial reporting quality was measured using the IASB Conceptual Framework qualitative characteristic model. The research design adopted in this study was *ex post facto*, secondary data was used and the population of study was 11 listed ICT firms in Nigeria. The hypotheses of the study was tested

using pool ordinary least square technique and the statistical package employed was E-views version 10. From the outcome of the analysis, it was found out that firm size has a significant but negative effect on the financial reporting quality; firm age has an insignificant negative effect on the financial reporting quality; firm profitability has a negative and insignificant effect on the financial reporting quality; auditor type has significant positive effect on financial reporting quality; firm asset tangibility has a significant but negative effect on the financial reporting quality of ICT firms in Nigeria. Thus, it was concluded that corporate attributes enhance financial reporting quality of firms in Nigeria. Based on the foregoing, it was recommended among others that the management of ICT firms should carefully select reputable and experienced audit firms to enhance the credibility and reliability of their financial statements. More also, ICT firms should reduce the amount of tangible non-current assets in their assets base as they have negative influence on financial reporting quality.

**Keywords:** Corporate Attributes, Firms Size, Firm Age, Firm Profitability, Auditor Type, Assets Tangibility, Financial Reporting Quality

### **1. Introduction**

#### **1.1 Background to the study**

Quality constitutes the characterises, feature or attribute of a thing especially something good (Umo, 2023) <sup>[31]</sup>. It defines the standard expected of something, an organisation or an entity especially the one that makes it different when compared to something else (Umo, 2022) <sup>[30]</sup>. In an organisational setting, the quality of financial reporting is the product of governance structure and other specific attributes of a business entity. Information provided by an entity, therefore, must exhibit the attributes of quality, relevance, compatibility, timeliness, verification, usefulness and importance and must also guide investment and other strategic decisions (Umo, 2023) <sup>[31]</sup>. In line with this is the financial reporting quality especially in an emerging market system such as Nigeria. Stakeholders have varying interest in the economic activities of any entity. They need information that are relevant to their decision making and are also understandable, comparable, verifiable and timely. The growing demand for high quality financial information has become imperative in Nigeria, especially in the Information Communication Technology (ICT) due to globalization and expansion of business beyond the national borders. Thus,

companies are obliged to satisfy the information needs of both local and foreign investors by providing them with relevant and comparable financial reports. Admittedly, it is obvious that only companies with certain characteristics or attributes provide financial report that meet the qualitative characteristics of accounting information as provided by the International Accounting Standards Board (IASB) Conceptual Framework.

Corporate attributes refer to those characteristics exhibited by a firm and which also influence the firm's behaviour and performance. These attributes include firm size, age, profitability, auditor type, among others (Bashir, 2019) [7]. They can affect a firm's financial reporting quality, either positively or negatively. An understanding of the relationship between these attributes and financial reporting quality is crucial. The impact of firm size, firm age and firm profitability, auditor type and assets tangibility on financial reporting quality of ICT firms deserves due concern. Firm size is an essential attribute as larger firms may have more resources to invest in financial reporting systems and attract more scrutiny from stakeholders (Aljinović *et al.*, 2021) [5]. Age is another important attribute as older firms' may have established more robust financial reporting processes and may be more transparent (Baboukardos *et al.*, 2021) [6]. Profitability is also a critical attribute as profitable firms may have more incentive to report accurately to maintain their reputation and attract more investors (Ahmed *et al.*, 2018) [2]. High audit quality which translates into high financial reporting quality is associated with large audit firms because of superior resources to perform audit, wide client network and non-dependency on a particular client than smaller audit firms (DeAngelo, 2018) [10]. They also have greater incentives to protect their established reputation by performing high quality audits so as not to be associated with audit failure. Tangible assets provide a tangible book value that serves as a floor for a firm's valuation (Damodaran, 2012) [9]. Investors and analysts consider the composition and quality of tangible assets in their assessment of a firm's financial health and long-term prospects.

Financial reporting quality entails the faithful representation and relevance of the information conveyed by the financial reporting process (Masud, 2022) [21]. The quality of financial reports has received massive attention due to various scandals arising from earnings management and misrepresentation of financial report in recent years. Large companies had collapsed and investors misled as a result of poor financial information quality occasioned by earnings management. Financial reporting quality has always been of interest among regulatory bodies, shareholders, researchers and the accounting profession itself. This is because financial reporting has been a principal means of communicating financial information to outside users and the financial report itself is used in assessing the firm's economic performance and condition in the quest to monitor management's actions and assists in making economic decisions (Johnson *et al.*, 2022) [19].

Previous researches have established that corporate attributes can affect the manner in which companies present their financial information. According to Baboukardos *et al.*, (2021) [6] firm size positively affect financial reporting quality, with larger firms being more likely to have higher-quality financial reporting due to their greater resources and access to expertise. Moreover, older firms are found to have

higher financial reporting quality due to their longer experience and better-established internal control systems (Masud, 2022) [21]. Profitable firms are also more likely to have a lower level of earnings management and thus high financial reporting quality. A reputable and experienced auditor can provide assurance on the accuracy of the financial statement and help detect errors or irregularities. (Shiyanbola, 2019) [29]. Thus, firms' attributes play crucial role in shaping the quality of financial reporting. Firms that prioritize transparency, accountability are more likely to produce high quality financial reports that inspire investors' confidence and trust.

In Nigeria most of the related studies focused on other sectors of the economy. For instance manufacturing sector (Handoyo *et al.*, 2022; Umo, 2023 [31]; consumer goods companies (Olowookere 2021) [25], industrial goods sector (Fagbemi *et al.*, 2022) [13] and real estate (Dewi & Fachrurrozie, 2021) [11]. This research work took a step further and focused on information communication technology (ICT). Moreover, most of the studies used other measures of financial reporting quality such as earnings persistence and accruals; earnings smoothness; asymmetric timeliness and timely loss recognition; and target beating. But this writer made use of IASB qualitative characteristic and a disclosure checklist was developed based on these qualitative attributes.

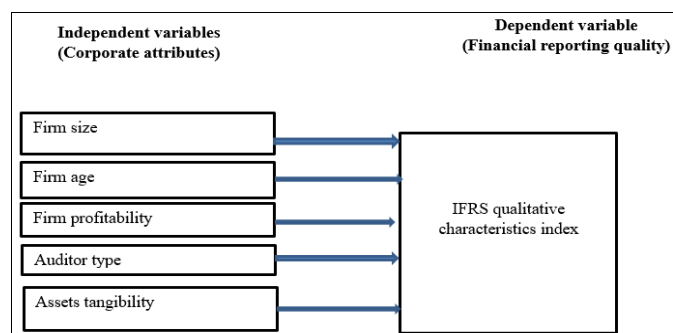
This paper attempts to show that corporate attributes have some impact on the financial reporting quality of listed Information Communication Technology (IC) firms in a developing economy like Nigeria.

## 2. Review of Related Literature

In this chapter extensive review of related literature with particular emphasis on conceptual framework, theoretical framework and review of empirical studies was carried out.

### 2.1 Conceptual framework

Fig 1 below present the conceptual relationship between the variables under study, namely, the independent and dependent variables.



Source: Researcher's conceptualization (2024)

Fig 1: Conceptual framework of variables

### 2.2 Conceptual Review

Some related concepts are discussed below based on the conceptual framework presented.

#### 2.2.1 Corporate Attributes

Corporate attributes refer to the characteristics or traits that a company possesses and these distinguish them from other companies. According to Mbonu and Amahalu (2021), Firm characteristics are the various types of information presented in financial statements of business organizations that serve as predictors of the firms' accounting information quality

and performance. Firm characteristics can also be defined as the behavioural patterns of company's operation which can enable them to achieve their objectives throughout the period of their operations (Mbonu & Amahalu 2021). The financial attributes of firms include measures such as firm size, profitability, liquidity, leverage, and assets tangibility (Hitt *et al.*, 2017). Other firm attributes include listing status, number of shareholders, ownership structure, industry type and capital structure. These attributes are commonly used in financial analysis and valuation to assess a company's financial health and potential for future growth. Non-financial attributes of firms include factors such as product quality, innovation, reputation, and brand equity (Barney, 1991). These features normally influence company decisions and information disclosure as well as risk disclosure in the financial report. The qualities of a company differ from one another. The characteristics of a company can be established based on the relevant information presented in its financial statements for a specific accounting period (Bunea & Dinu, 2020).

These attributes are critical for understanding the competitive advantage and differentiation of firms in their respective markets. For instance, researchers have found that smaller firms are more likely to innovate (Claudia *et al.*, 2021), while family-owned firms may have longer planning horizons. Additionally, firms that are publicly traded may face greater pressure to meet short-term financial targets, which can affect their investment decisions. Another set of firm characteristics relate to industry factors, such as the degree of competition, technological change, and regulatory environment. For example, some studies have found that firms in more competitive industries are more likely to engage in R&D (Putri & Indriani 2020), while others have found that regulatory barriers can create opportunities for established firms to maintain their market power. A third set of firm characteristics are related to human capital, such as the education and experience of top managers and employees. Some studies have found that firms with more diverse management teams are more likely to introduce new products and services (ibid) while others have found that CEOs with more experience in their industry are more likely to make strategic acquisitions.

Firm characteristics distinguish one firm from another in terms of its functions and operations (Nkundabanyanga *et al.* 2020). They describe a firm's physical dimensions (size and resource) or inherent identity (age and type). Different firms have different strengths and weaknesses that affect the choice of competitive strategy (Ali *et al.*, 2019)<sup>[4]</sup>. Firm characteristics are associated with resources, accumulation of experiences, and the nature of the business. A large firm is associated with superior resources compared to a small firm. Mature firms are expected to have more accumulation of experience than young firms. Industry type affects the way organisations are managed following the nature of the business. Different ownership implies the disparity of resources, knowledge, and technology.

Researches in Accounting have investigated relationships between corporate characteristics and corporate financial reporting quality. They also argue that every company has its own vision, mission, goals, objectives, structure, features, strengths, weaknesses, opportunities, threats, work plans, and strategies, which distinguish it from other companies (Umo, 2022<sup>[30]</sup>; Hassan 2021; Umo, 2023<sup>[31]</sup>). The characteristics of each sample company are clearly different

with regard to their size, nature of business, capital structure, management style, board independence, composition of board, quality of independent directors, corporate governance, ownership structure, business strategies, auditors quality, customers, access to financial services, leadership quality, innovation policy, entrepreneurship orientation, ethical culture, corporate social responsibility, corporate culture, ecological guidelines, market reputation, market capitalization, profitability and the like.

### 2.2.2 Firm size

The size of a firm refers to the volume or scale of operation turned out by a firm. The size of a firm significantly affects the profitability and efficiency of the firm. Firm size refers to the total assets, sales revenue, or number of employees of a company. It is one of the most widely used measures of a firm's scale or scope of operations. The firm size in most cases is measured by its asset size (Saheed, 2018). A large firm is expected to have a well-structured accounting and internal control department and should be able to afford the services of professionals who are expected to enhance the financial reporting process (Chalaki *et al.*, 2021). They are also likely to have a well-built information system enabling them to track all financial and non-financial information for operational, tactical and strategic purposes (Saheed, 2018). In addition, large firms are able to engage the services of one of the big auditing firms to audit their financial statement which is expected to enhance the quality of financial reporting (Thoopsamut & Jaikengkit, 2019) because the big audit firms are expected to be very professional in their auditing and be concerned over their reputations.

In the existing literature, numerous studies have found a significant relationship between firm size and the level of disclosure (Archambault & Archambault, 2013; Lang & Lundholm, 2019). The positive association between firm size and disclosure can be attributed to several reasons. Firstly, the disclosure of detailed information incurs significant costs, which may be prohibitive for smaller firms. In contrast, larger firms have more resources at their disposal, making it easier to generate the required information internally and disclose it publicly at a lower marginal cost. Secondly, larger firms tend to have a broader business scope, offering a wider range of products and services across multiple geographies (Umo, 2023)<sup>[31]</sup>. This diversity often necessitates detailed information for management purposes, making it more likely that such information will also be disclosed publicly. Moreover, larger firms often rely on financial markets to raise funds more frequently than smaller firms. They understand that the cost of capital and the success of new securities issuance are closely tied to the extent of disclosure to stakeholders (Kalbuana *et al.*, 2021)<sup>[20]</sup>. Finally, small firms may be hesitant to disclose detailed information due to concerns about a competitive disadvantage with larger firms within the same industry (Buzby, 2019). Therefore, larger firms are more likely to disclose information publicly, which can enhance their reputation and improve their ability to attract investment.

### 2.2.3 Firm age

Firm age is a significant variable that has been studied extensively in the accounting and finance literature. The age

of a firm is an important determinant of its financial reporting quality, which refers to the degree to which a firm's financial statements are reliable and informative to its stakeholders. Firm age refers to the length of time a company has been in operation since its incorporation. It is an important variable because it can affect a company's growth potential, survival rates, and financial performance (Hitt *et al.*, 2017). As time passes, firms discover what they are good at and learn how to do things better as they specialize more and new techniques are found to standardize, coordinate, and speed up their production processes, as well as to minimize costs and improve quality (Ericson & Pakes, 2018). Based on prior research, firms that have been in the market for a long time tend to have low level of earnings management than beginners as they are well known companies, that have a great value in the market and they have a reputation to protect, also they are aware of the rules and codes that govern their practices.

Moreover, long established firms might have improved their financial reporting practices over time (Alsaeed, 2016) and can enhance their reputation and image in the market, so the older the firm the higher the tendency to perform or engage in superior financial information disclosures. Usually, long established firms are audited by one of the big auditing firms and based on (Ali *et al.*, 2019)<sup>[4]</sup> big audit firms have incentive to report material misstatements in order to protect their reputation. In addition, governmental agencies always pay attention to firms that have been in the market for a long time more than the newly entered firms, therefore, when the age increases, the firm tends to improve its governance by issuing high quality financial reports without manipulations. (Chalaki *et al.*, 2021).

### 2.2.4 Firm profitability

Profitability is the degree to which a business yield profit or financial gain. It is the ability of a company to use its resources to produce and generate revenues in excess of its expenses (Umo, 2023)<sup>[31]</sup>. In order words, it is the capability of a company to generate profits from its productive operations using its resources (Umo, 2023)<sup>[31]</sup>. Profitability can likewise be referred to as 'earning power" or working performance of the business which add up to Investment (Hasan, 2021). According to Adebayo *et al.*, (2022). profit is characterized as the capacity an investment has, to acquire a sizable income from its consistent use in business. This suggests that profit is a composite idea relating to the effectiveness of the organization to earn profit. Furthermore, they argued that profitability measures the capacity of the firm to persistently create income, while Etim *et al.*, (2023) uncovered that the normal return, for the most part alluded to as profit, realize from the capital market, can likewise be considered as the opportunity cost.

Firms' profitability has been argued to influence the quality of financial reporting. Alsaeed (2016) argued that a profitable firm may feel proud of its achievements and therefore would wish to disclose more information to the public in order to promote positive impressions of its performance. Besides that, the profit level has also been argued to have an influence on the manipulation of accounting accruals because managers may manage earnings to increase their bonus rewards (Ghofir & Yusuf, 2020). Several studies have examined the relationship between firm profitability and financial reporting quality. For example, Musa *et al.*, (2019) found that firms with

higher profitability have higher financial reporting quality. They argued that profitable firms are more likely to have better internal controls, which can result in higher quality financial statements. In this study profitability was measured in terms of return on Asset. This ratio measures the amount of return earned on every Net Income invested on assets. It is the ratio of net income for the period to average total assets.

It is given as;

$$ROA = \frac{PAT}{\text{Average total Assets}} \times 100$$

Where PAT = Profit after tax

### 2.2.5 Auditor type

Auditor type refers to the classification of audit firms based on their size, reputation, and level of expertise. The different types of auditors include the Big Four, mid-tier, and small audit firms. The Big-4 audit firms are large audit firms with international presence. While the non-Big-4 audit firms are small audit firms with only national or local presence. High audit quality which translates into high financial reporting quality is associated with large audit firms because of superior resources to perform audit, wide client network therefore non-dependent on a particular client than smaller audit firms (DeAngelo, 2018)<sup>[10]</sup>. They also have greater incentives to protect their established reputation by performing high quality audits so as not to be associated with audit failure. Auditor type is usually measured by way of assigning a dummy variable 1 where a firm is audited by the big audit firms, otherwise, 0. In Nigeria, the Big-4 auditors are Akintola Williams Delloitte, Pricewaterhouse Cooper, Ernest and Young, and KPMG (Jerry & Saidu, 2018).

Auditors act like watchdog for shareholders by restraining the opportunistic conduct of managements, thus they ensure that managements comply with the reporting requirement of the accounting standards. Auditors that are negligent in ensuring compliance to the provisions of International Financial Reporting Standards are likely to suffer some penalties and reputation loss. To avoid loss of reputation, these firms demand higher levels of disclosure (Musa *et al.*, 2019). However, the relationship between auditor type and financial reporting quality is unanimous. For example, Lennox (2015) found that while Big Four auditors were associated with higher levels of financial reporting quality, mid-tier auditors were also associated with high levels of quality, and that the difference in quality between the two types of auditors was relatively small. Additionally, studies have shown that the effect of auditor type on financial reporting quality may depend on other factors, such as the level of audit fees, the degree of auditor independence, and the nature of the client's business (Abubakar, *et al.*, 2023).

### 2.2.6 Firm Assets Tangibility

The physical nature and qualities of a company's assets are referred to as its firm asset tangibility. Tangible assets are physical assets that can be touched, seen, or quantified. Tangible assets are physical assets that can be employed in the production or operation of a firm. Land, buildings, machinery, equipment, cars, inventory, and other physical things are examples of assets. These assets are usually listed

on a company's balance sheet and have a monetary value. Tangible assets depreciate over time as a result of wear and tear or obsolescence (Khanh & Khuong 2018). Depreciation expenses are recorded on the income statement of the company, reducing net income. Specific norms and laws govern the accounting treatment of tangible assets, assuring proper reporting of their value and associated depreciation.

Asset tangibility can influence a company's valuation. Tangible assets provide a tangible book value that serves as a floor for a firm's valuation (Damodaran, 2012) <sup>[9]</sup>. Investors and analysts consider the composition and quality of tangible assets in their assessment of a firm's financial health and long-term prospects. Firm asset tangibility can affect a company's investment decisions and expansion strategies. Tangible assets, such as machinery and equipment, are often essential for production capacity expansion and technology upgrades (Echobu, *et al.*, 2019).

The level of asset tangibility may determine the ease and cost-effectiveness of such investments. Asset tangibility can contribute to a firm's competitive advantage and differentiation. In industries where tangible assets play a crucial role, such as manufacturing or logistics, firms with substantial tangible assets may have a competitive edge in terms of operational efficiency, economies of scale, and control over production processes (Putri & Indriani, 2020). Asset tangibility is often contrasted with intangible assets, which include intellectual property, patents, trademarks, brand equity, and customer relationships. The combination of tangible and intangible assets contributes to a firm's overall value and competitive position. The optimal balance between tangible and intangible assets depends on the nature of the industry, market dynamics, and strategic objectives.

Asset tangibility is important in a company's financial structure and investment decisions. Tangible assets can be used as collateral to get loans or obtain lender financing (Putri & Indriani, 2020). Lenders frequently prefer tangible assets as collateral because they are easier to value and may be seized and sold in the event of a default. The tangibility of assets can influence a company's risk profile and borrowing rates. Lenders may regard firms with larger levels of tangible assets as less risky since these assets provide a cushion in the case of financial trouble or default (Modigliani & Miller, 1958). As a result, organizations with more tangible assets may have lower borrowing costs than enterprises with mostly intangible assets. An entity with a significant number of tangible assets can borrow at a lower interest rate by providing lenders with the security of these tangible assets. According to Olowokure *et al.*, (2016), the tangibility of assets has a significant impact on the costs of financial distress. They claim that tangible assets are easier to collateralize and suffer less value loss when enterprises fail, implying that firms with more tangible assets will use more debt in their capital structure. Similarly, Shehu and Bello (2020) observed that if a high proportion of a firm's assets are tangible, then those assets should serve as collateral, reducing the danger of the lender incurring debt agency costs (risk shifting). Assets should also hold higher value when liquidated.

As a result, the bigger the share of physical assets on the balance sheet, the more ready lenders should be to make loans, and leverage should be higher. Consequently, the company would be attractive to shareholders in terms of bankruptcy, there are assets that could be sold off to settle part of their capitals.

### 2.2.7 Financial reporting quality

Financial reporting quality is defined as the faithfulness of the information conveyed by the financial reporting process (Adedapo & Olawale, 2019). Jonas and Blanchet (2000) define *FRQ* as financial reports that present full and transparent financial information and are not designed to obfuscate or mislead users. *FRQ* can also be seen as the precision with which the financial reports convey information to equity investors about the firm's expected cash flows (Biddle *et al.*, 2009). Biddle *et al.* state that *FRQ* indicates the precision with which financial reports convey information about the firm's operations, in particular, its cash flows, to inform the equity investors. The Biddle *et al.* definition is limited to only equity investors hence limited in scope. Other authors like Elbannan, (2020) define *FRQ* as the extent to which financial reports of a company communicate its underlying economic state and its performance during the period of measurement. A similar definition is provided by Tang *et al.* (2008) where they define *FRQ* as the extent to which the financial statements provide true and fair information about the underlying performance and financial position. In most of the papers, *FRQ* is either defined by the quality of financial statements (financial reporting) or by the qualitative characteristics of financial information. The agreement so far is that high-quality financial reporting provides information that is useful to the information users especially for assessing performance, managerial stewardship, and prospects. Such information ought to be relevant, faithfully presented, complete, understandable, timely, and comparable. The quality of financial reporting and reported earnings can be thought of as spanning from the highest (containing information that is relevant, correct, complete, and unbiased) to the lowest (containing information that is not just biased or incomplete but possibly pure fabrication). The highest level of *FRQ* starts whenever the company is following Generally Accepted Accounting Principles (GAAPs) that are in force (i.e., IFRS in the case of Nigeria). Such a company follows the correct accounting rules, within the IFRS the company chooses the accounting policies that represent the underlying of the transactions rather than the form of the transaction. That is, the company basically, emphasizes the substance over the form of the transaction. The lowest of the quality spectrum

According to IASB, the essential principle of assessing the financial reporting quality is related to the faithfulness of the objectives and quality of disclosed information in a company's financial reports. These qualitative characteristics enhance the usefulness of financial reports, which will also lead to a high level of quality. To achieve this level, financial reports must be faithfully represented, comparable, verifiable, timely, and understandable. Thus, the emphasis is on having transparent financial reports, and not having misleading financial reports to users; not to mention the importance of preciseness and predictability as indicators of a high financial reporting quality (Harymawan & Nurillah, 2017).

As it is defined in the *Conceptual Framework for Financial Reporting* of the IASB, there are agreed upon elements of high-quality financial reporting. The qualitative characteristics of financial reporting quality include: Relevance, faithful representation, understandability, comparability, verifiability, and timeliness. They are divided into fundamental qualitative characteristics and enhancing

qualitative characteristics. A theoretical explanation for each of these terms emphasizes their importance as qualitative characteristics, and also indicates what qualities are considered fundamental among different frameworks.

## 2.3 Relationships between Variables

### 2.3.1 Firm size and financial reporting quality

Firm size can affect financial reporting quality in several ways. Larger firms generally have more resources to invest in accounting and reporting systems, which can lead to higher quality financial reporting. They are also subject to greater regulatory scrutiny, which can motivate them to produce higher quality financial reports. Larger firms tend to have more experienced management teams and better governance structures, which can lead to higher quality financial reporting. Additionally, the complexity of larger firms can make financial reporting more challenging, but it can also incentivize them to invest more resources in their accounting and reporting systems to ensure that their financial reports are accurate and complete. They typically have dedicated departments or teams responsible for financial reporting, such as financial reporting, compliance, and internal audit. These specialized functions help ensure that financial statements are prepared in accordance with relevant accounting standards and regulatory requirements, leading to higher quality financial reporting. According to McInnis *et al.* (2021), they often face increased scrutiny from external auditors, regulators, and stakeholders due to their size and public visibility. This can result in more thorough and rigorous audits, including extensive testing and review procedures, which can help identify and rectify any financial reporting deficiencies or weaknesses. More so larger firms generally have a greater emphasis on transparency and disclosure due to regulatory requirements, investor expectations, and market demands. They may provide more detailed and comprehensive financial disclosures, including segment reporting, related party transactions, and risk management considerations, thereby improving the overall quality of financial reporting.

### 2.3.2 Firm age and financial reporting quality

Firm age is another factor that impact on financial reporting quality of firms. Older firms tend to have more experience in accounting and financial reporting, which can lead to higher quality financial reporting. The years of existence has made them developed more sophisticated accounting and reporting systems over time, and may have established relationships with external auditors and regulators that can help to ensure the accuracy and completeness of their financial reports. Additionally, older firms are generally more stable than younger firms, which can make it easier to forecast and report financial results accurately. They may also have more experienced management teams and better governance structures, which can lead to higher quality financial reporting (Baboukardos *et al.*, 2021) <sup>[6]</sup>. Furthermore, older firms may be more conservative in their financial reporting, which can lead to more accurate financial reports.

They generally have a longer history of financial reporting and accumulated experience in preparing financial statements. With years of experience, they develop a better understanding of accounting principles, reporting requirements, and industry-specific practices. This experience and knowledge can contribute to improved

financial reporting quality. Firms with a longer operating history may have a track record of consistent financial performance and credibility in the market. This can enhance the firm's reputation and increase stakeholders' confidence in the accuracy and reliability of its financial reporting. DeFond and Subramanyam (2020), also noted that older firms often retain employees who have been with the company for a long time, resulting in institutional memory and continuity. This can help maintain consistency in financial reporting practices and mitigate the risk of errors or inconsistencies that may arise from changes in personnel or reporting procedures.

### 2.3.3 Firm profitability and financial reporting quality

In general, higher profitability has been associated with higher financial reporting quality. When firms are more profitable, when their productivity index is high (Umo, 2023) <sup>[31]</sup>. They have greater resources to invest in systems, processes, and controls that can improve the quality of their financial reporting. Additionally, more profitable firms may face greater scrutiny from investors, regulators, and other stakeholders, which can incentivize them to provide more accurate and transparent financial information. Conversely, firms with lower profitability may be more prone to accounting manipulations or errors, as they may face greater pressure to meet earnings targets or present a positive financial image to stakeholders (Umo, 2021) <sup>[32]</sup>. However, it is important to note that the relationship between profitability and financial reporting quality may also depend on other factors, such as the firm's industry, size, and governance structure.

According to Lee *et al.* (2019), increased revenues can also provide the financial flexibility to hire experienced staff and adopt sophisticated accounting software and reporting systems. A profitable firm generally enjoys a higher reputation and credibility in the market due to its ability to generate consistent profits over time. This can increase stakeholders' trust and confidence in the accuracy and reliability of the firm's financial reporting. They can offer higher salaries and benefits to attract and retain talented employees with experience in financial reporting. Experienced and knowledgeable employees are more likely to produce accurate and reliable financial reports. Narayanan *et al.*, (2021) also noted that a profitable firm can afford to invest in robust internal control processes to ensure compliance with accounting standards and regulations. An effective internal control system can prevent errors and detect fraudulent activity, ultimately improving the overall quality of financial reporting (Umo, 2021) <sup>[32]</sup>.

### 2.3.4 Auditor type and financial reporting quality

The type of auditor can refer to whether the auditor is internal or external, as well as whether the external auditor is a Big 4 or non-Big 4 accounting firm. External auditors, in general, are expected to provide a level of independent assurance over a company's financial statements, which can help to increase the quality of the financial reporting. External auditors are independent professionals hired by organizations to provide an unbiased opinion on the accuracy and reliability of their financial statements. They play a crucial role in enhancing financial reporting quality by conducting audits, examining financial records, and evaluating internal control systems. External auditors provide stakeholders with assurance that the financial

statements present a true and fair view of the organization's financial position (Umar, 2022). They involvement of Big 4 audit firms particularly can enhance the financial reporting quality by bringing best practices, knowledge of industry-specific accounting standards, and rigorous audit procedures. The reputation and credibility associated with these firms can also provide stakeholders with confidence in the accuracy of financial reports (Umo, 2021) <sup>[32]</sup>.

The internal auditors on the other hand, are employed within organizations to assess and improve internal control processes, risk management, and governance systems. Their role in improving financial reporting quality includes conducting regular audits, identifying control weaknesses, recommending improvements, and ensuring compliance with accounting policies and regulations (Umo, 2021) <sup>[32]</sup>. Internal auditors act as a safeguard against inaccuracies and fraudulent activities, thereby enhancing the overall quality of financial reporting. Several studies have found positive significant relationship between auditor type and financial reporting quality (Abubakar *et al.*, 2023). Umar (2022) however found negative relationship between the two. Overall, the literature shows positive relationship between auditor type and financial reporting quality.

### 2.3.5 Asset tangibility and financial reporting quality

In financial reporting, tangibility of assets refers to the physical existence or presence of an asset, such as property, plant, and equipment (PP&E), inventory, and other fixed assets. The tangible nature of assets can improve financial reporting quality in several ways. Tangible assets are typically valued based on their physical characteristics, such as cost, useful life, and depreciation. These factors provide a clear basis for determining the value of the assets reported on the statement of financial position. Depreciation schedules, for example, provide a systematic way to record the cost of using up assets over their useful life, ensuring that assets are not overstated. The physical presence of tangible assets makes it easier to verify their existence and ownership. For example, an inventory count can confirm that physical goods are present, while examining PP&E can confirm that the assets listed on the statement of financial position correspond to actual property owned by the company.

Additionally, Demirgüç-Kunt and Maksimovic (2018) opined that tangibility can help prevent overstatement of assets, such as when intangible assets are recorded at inflated values. For instance, patents may be valued based on assumptions about future revenue streams, which may not materialize. On the other hand, fixed assets like real estate or equipment have a definitive physical presence and cost that is much harder to manipulate or inflate. The tangible nature of assets can act as a deterrent against fraudulent behavior. In contrast to intangible assets, which can be more easily manipulated or falsified, physical assets require more effort to misrepresent. By enforcing proper controls over physical assets, businesses can reduce the risk of financial reporting fraud. Overall, assets' tangibility provides greater clarity and reliability in financial reporting that enhances investor confidence, lowers the risk of financial misrepresentation, and helps to reveal any fraudulent activity.

Findings of previous researches on the relationship between firm asset tangibility and financial reporting is mixed. Positive relationship exists in the studies of Frank & Goyal

(2009), Akdal (2021), Bashir (2019) <sup>[7]</sup> while negative relationship exists in Dewi and Fachrurrozie (2021) <sup>[11]</sup>. No relationship was found in Handoko (2016). However, Barclay & Smith (2020) observed a positive relationship up to a certain level of asset tangibility, beyond which the relationship becomes negative.

### 2.4 Determinants of financial reporting quality

This section discusses the main factors that influence the quality of financial reporting because researchers need to control for them whenever FRQ is their dependent variable in order to model the true effect of their predictors.

#### (a) Accounting standards

The foundation of accounting disclosure in any company is the accounting standards that are in place. This is why regulators and other actors in the financial reporting process are interested in how accounting standards are designed. Higher quality accounting standards, all things being equal, should positively affect FRQ (Zicke & Kiy, 2017). Several studies indicate that IFRS improves the quality of financial reporting (Bodie *et al.*, 2021; Callao & Jarne, 2010; Barth *et al.*, 2008). However, other studies indicate that financial reporting quality is not determined only by accounting standards (Lee *et al.*, 2013).

#### (b) Enforcement level by the regulatory authorities

Another widely held factor that influences FRQ is the level of enforcement of accounting standards. A common assumption frequently made by policymakers and in empirical studies is that greater enforcement increased both FRQ and audit quality, and several studies provide supporting evidence (Christensen *et al.*, 2013; Silvers, 2016).

#### (c) Corporate governance

Extant literature also identifies corporate governance as an essential factor that influences FRQ. Several studies revealed that a firm's governance mechanism is significantly positively related to FRQ (Gajevszky, 2016; Cao, *et al.* 2022, Klai & Omri 2011).

#### (d) The quality of audit

The auditing process which covers internal audit function, external audit, and quality of the audit committee enhances financial statement reliability and usefulness. Since auditing is an important assurance service in the financial reporting process, the quality of audit reflects the overall FRQ (Tang *et al.*, 2016). Extant literature report that the presence of internal audit and a higher quality internal audit function is linked with higher FRQ (Ege, 2015).

#### (e) Audit committee

The audit committee is also an important factor that determines FRQ. The audit committee hires, evaluates performance, and compensates external auditors. The committee also supervises financial reporting by monitoring accounting policies and estimation choices. Prior research suggests that audit committee quality can improve financial reporting quality by reducing the incidence of fraudulent reporting, accounting irregularities, earnings management, and aggressive accounting choices (Umo, 2021) <sup>[32]</sup>.

#### (f) Management expertise and motivations

Managerial expertise and motivations are in addition to auditing quality identified by the previous studies as the major factor determining the extent of FRQ (Umo, 2023) <sup>[31]</sup>. Management of companies is responsible for the preparation and dissemination of accounting information. Thus, personal managerial factors also explain FRQ. Prior research

suggests that several management characteristics are associated with reporting quality (Habib & Hossain, 2013; Umo, 2023<sup>[31]</sup>).

### 2.5 Measures of financial reporting quality

Diverse approaches are employed in accounting literature to measure FRQ and earnings quality using approaches such as earnings smoothing, timely loss recognition, value relevance persistence or sustainability, earnings smoothing, accruals quality. A detailed explanation of the different methods of measuring FRQ is discussed as follows:

#### 2.5.1 Earnings Management

According to Levitt (1998) earning management is a “gray area where the accounting is being perverted; where managers are cutting corners; and, where earnings reports reflect the desires of management rather than the underlying financial performance of the company”. Earnings management is a purposeful intervention in external financial reporting, with the intent of obtaining some private gain (Schipper, 1989). This intentional manipulation of earnings is usually aimed towards a predetermined target (Mulford & Comiskey, 2002). Many authors including Bodie *et al.*, (2021) and Christensen *et al.* (2013) identified earnings management as an inverse measure of *FRQ*. At the onset, earnings smoothing seems normal and mostly with the desire to benefit even investors, however, earnings management often follows a slippery slope, where small accounting gimmicks become more and more aggressive until they create material misstatements in the financial statements (Ajekwe, 2017). Earnings management could be either accounting (accruals-based) or real (cash-based) earnings management. The idea of measuring *FRQ* using the accruals-based approach was pioneered by Jones (1991).

**a. Accruals-based earnings management:** Accruals-based earnings management refers to the actions by the manager to change the way certain events and transactions are recognized in the accounting system. The calculation of accruals-based earnings management follows the commonly employed models by Jones (1991), Dechow *et al.*, (1995) and Kasznik (1999) and Tuna (2002) as: Jones (1991).

$$ACC_{it} = \alpha_0 + \alpha_1 \Delta REV_{it} + \alpha_2 PPE_{it} + e_{it}$$

Where:

ACC =	Total accruals calculated as the difference between earnings and cash flows from operation (ACC = EARN – CFO). Earnings (EARN) is defined as net income after tax items and cash flows from operation (CFO) is net cash flows from operating activities reported in the Statement of Cash Flows.
ACC =	total accruals
ΔREV =	change in revenue from year t-1 to year t (REV <sub>t</sub> – REV <sub>t-1</sub> )
PPE =	gross property, plant, and equipment in year t.

All variables are scaled by beginning total assets

Dechow *et al.* (1995):

$$ACC_{it} = \alpha_0 + \alpha_1(\Delta REV_{it} - \Delta REC_{it}) + \alpha_2 PPE_{it} + e_{it}$$

where:

ΔREC = change in net accounts receivables from year t-1 to year t (REC<sub>t</sub> – REC<sub>t-1</sub>).

All variables are scaled by beginning total assets.

Kasznik (1999):

$$ACC_{it} = \alpha_0 + \alpha_1(\Delta REV_{it} - \Delta REC_{it}) + \alpha_2 PPE_{it} + \alpha_3 \Delta CFO_{it} + e_{it}$$

Where:

ΔCFO = change in cash flows from operation from year t-1 to year t (CFO<sub>t</sub> – CFO<sub>t-1</sub>).

All variables are scaled by beginning total assets.

Dechow *et al.*, Richardson, and Tuna (2002):

$$ACC_{it} = \alpha_0 + \alpha_1[\Delta REV_{it} - (1 - k)\Delta REC_{it}] + \alpha_2 PPE_{it} + \alpha_3 ACC_{it-1} + \alpha_5 \Delta REV_{it+1} + e_{it}$$

Where:

K = slope coefficient from regression ΔREC on ΔREV

ACC<sub>t-1</sub> = total accruals in t-1 scaled by total assets in t-2  
 REV<sub>t+1</sub> change in revenue from year t to year t+ 1, scaled by revenue in year t ((REV<sub>t+1</sub> – REV<sub>t</sub>)/REV<sub>t</sub>).

Other variables are scaled by beginning total assets. Nondiscretionary accruals (NDAC) are fitted values from the above models and discretionary accruals (DAC) are defined as the residuals in each case.

**a. Real Earnings Management:** On the other hand real earnings management occur when firms manage their profit through changes in real business transactions by for instance reducing selling prices to boost sales, cutting down discretionary expenses to increase current profit, and overproducing goods (inventory) to reduce costs of sales (Roychowdhury, 2006).

Real earnings management affects operating cash flows directly and is accordingly referred to also as cash-based earnings management. Roychowdhury (2006) stated that firms that involve in real earnings management exhibit at least one or more of the following characteristics: Abnormally low discretionary expenses and abnormally high production costs.

To measure real earnings management through discretionary expenses, Roychowdhury (2006) estimated the following equation:

$$\frac{DISX_t}{A_{t-1}} = \beta_0 + \beta_1 \left(\frac{1}{A_{t-1}}\right) + \beta_2 \left(\frac{S_{t-1}}{A_{t-1}}\right) + \epsilon_t$$

Where:

DISX = is the discretionary expense at year t, which is computed as the sum of selling, general, and administrative expenses (SG&A) and research and development (R&D) expenses; A = is the total assets in year t-1; S = is the net sales in year t-1.

Roychowdhury (2006) estimated the normal level of production costs using the following equation:

$$\frac{PROD_t}{A_{t-1}} = \beta_0 + \beta_1 \left(\frac{1}{A_{t-1}}\right) + \beta_2 \left(\frac{S_t}{A_{t-1}}\right) + \beta_3 \left(\frac{\Delta S_t}{A_{t-1}}\right) + \beta_4 \left(\frac{\Delta S_{t-1}}{A_{t-1}}\right) + \epsilon_t$$



Where;

$PROD_t$  = is the sum of the cost of goods sold (COGS) in year  $t$  and the change in inventory from  $t-1$  to  $t$ ;

$S_t$  = is the net sales in year  $t$ ; and

$\Delta S_t$  = is the change in net sales from year  $t-1$  to  $t$ .

All variables are the same as above.

The abnormal level of production costs is measured as the estimated residual from the above equation. Higher residual values indicate a larger amount of inventory overproduction and consequently an increase in reported earnings through reducing the cost of goods sold. Roychowdhury (2006) found that managers temporarily increase sales by offering lenient credit terms or discounts in sales price. When this happens cost to sales ratio becomes abnormally high, additionally, this lowers cash inflow.

### (c) Accruals quality (AQ)

Accruals quality is the extent to which working capital accruals is mapped into operating cash flow realizations. This measure of earnings quality is based on the view that earnings that map more closely into cash flows are of better quality. The accruals quality was first measured by Dechow and Dichev (2002). They estimated earnings quality by the extent to which working capital accruals is mapped into last-period, current-period, and nextperiod cash flows from operations. McNichols (2002) adopt and expand the Dechow and Dichev model by including change in revenues and property plant and equipment (PPE) as additional explanatory variables. McNichols (2002) argues that these variables are important in forming expectations about accruals over and above the effects of operating cash flows. McNichols shows that adding these variables to the Dechow and Dichev (2002) regression significantly increases its explanatory power, thus, reducing measurement error. This McNichols (2002) formular for accrual quality is as given below;

$$TA_{it} = \alpha_i + \beta_{1i}CFO_{it-1} + \beta_{2i}CFO_{it} + \beta_{3i}CFO_{it+1} + \beta_{4i}\Delta REV_{it} + \beta_{5i}PPE_{it} + \mu_{it}$$

Where

TA = Total accruals in year  $t$ , (TA = NIBE – CFO),

CFO = Cash flow from operations,

NIBE = Income before extraordinary items,

$\Delta REV$  = Change in revenues,

PPE = Change in property, plant, and equipment,

$\alpha_i$  = Intercept

$\beta_{1,t}, \dots, \beta_{5,t}$  = Coefficients

$i$  = Individual

$t$  = Firm year.

$\mu_{i,t}$  = Firm-level residual

All variables are scaled by the average total assets.

### 2.5.2 Earnings Persistence (PERS)

Earnings persistence refers to the degree of sustainability or continuity of reported earnings.

It also connotes the autocorrelation in earnings regardless of the magnitude and sign of an earnings innovation (Lipe, 1990). It captures the extent to which the current period earnings become a permanent part of the earnings series. Earnings persistence answers the question of how far current earnings are embodied permanently in future earnings? (Ahrens, 2010). Following Francis *et al.*, (2004) and

Dechow *et al.*, (2010) time-series equation using maximum likelihood estimation was used to estimate persistence for each firm-year with the rolling ten-year data.

$$EARN_t = \alpha + \beta(EARN_{t-1}) + \varepsilon_t$$

Where

EARN = earnings after tax divided by the number of outstanding shares

$\alpha$  = intercept

$\beta$  = Earnings persistence (coefficient)

$\varepsilon$  = Residual term

Persistence is the slope coefficient from a regression of current earnings on lagged earnings. Values of  $\beta$  close to 1 imply highly persistent (i.e., high quality) earnings, while values of  $\beta$  close to 0 imply highly transitory (i.e., low-quality) earnings.

### 2.5.3 Earnings Predictability

Earnings predictability is a measure of  $EQ$  that is closely linked to earnings persistence. Schipper and Vincent (2003) defined earnings predictability as the ability of past earnings to predict future earnings. Volatility in earnings numbers decreases predictability. Dechow *et al.*, (2010) defined earnings predictability as the ability of earnings numbers to anticipate future cash flows of a firm. Furthermore, Tang *et al.*, (2016) stated that the significance of earnings predictability is pronounced when earnings numbers are used in valuing firms' equity, which requires shareholders or investors to anticipate the firms' expected future cash flows. Earnings predictability and earnings model for earnings predictability as:

$$EARN_t = \alpha + \beta(EARN_{t-1}) + \varepsilon_t$$

Or

$$CFO_t = \alpha + \beta(EARN_{t-1}) + \varepsilon_t$$

Where, the variance of the error term captures the variation in earnings,  $\varepsilon$  is the inverse measure of predictability. Although the measures of predictability and persistence begin from the same autoregressive regression, they are two different measurements. In other words, Dichev and Tang (2009) argued that the earnings stream is easier to predict, if the variance persistence is low. In contrast, Schipper and Vincent (2003), criticized earnings predictability measure for having the same problems as earnings smoothing, because it has not been cleared whether earnings predictability is the result of opportunistic earnings smoothing or signify high  $EQ$ . Moreover, unpredictable earnings are not necessarily a sign of earnings manipulation if the underlying economics of the firm is difficult to predict.

### 2.5.4 Earnings Smoothness (ESMOT)

Earnings smoothness means a deliberate dampening of the fluctuation in periodic profit over time to the extent allowed by accounting and management principles. It also refers to a deliberate normalisation of income to reach a desired trend or level. There are several ways of estimating earnings smoothness; however, these measures are positively and significantly correlated, suggesting that one measure at a

time is adequate. Following Myers, *et al.*, (2007), earnings smoothness is measured as the ratio of firm *i*'s standard deviation of net income after tax divided by beginning total assets, to its standard deviation of cash flows from operations divided by beginning total assets.

$$ESMOT = \left[ \frac{\sigma NIBE_t}{\sigma CFO_t} \right]$$

where

$\sigma NIBE_t$  = firm *i*'s standard deviation of income before extraordinary items,

$\sigma CFO_t$  = to its standard deviation of cash flows from operations All variables are scaled by total assets at the beginning of period *t*.

Standard deviations are calculated over rolling 5-year windows. A Larger ratio indicates less earnings smoothness relative to cash flows and vice versa. Earnings smoothing is a special case of earnings management (earnings manipulation). Some prior studies observe that smoothing veiled the true economic performance of a firm. Thus, earnings smoothing indicates low earnings quality since investors are misled (Leuz, *et al.*, 2003). *A priori* expectation is that firms with high earnings smoothing have high investors expected returns and vice versa. To ease the explanation, the coefficient of the measure is divided by minus one (-1) to reverse the sign and make it consistent with predictions.

#### **Timely Loss Recognition / Conservatism**

The concept of timeliness is also related to conservatism. Conservatism is a prudent reaction to uncertainty, reflecting in accounting the risk and uncertainty of a firm's performance (Mora & Walker, 2015). The use of timely loss recognition would result in recognizing losses quicker than possible profits, thus resulting in more prudent or conservative reporting. The accounting treatment of gains and losses is asymmetric when concerning the verification requirement. This difference is induced by the conservatism principle of accounting.

$$NI_t = \beta_0 + \beta_1 DUM_t + \beta_2 Ret_t + \beta_3 (Ret_t * DUM_t) + \epsilon_t$$

Where:

NI = Earnings before tax from year scaled by total assets,

Ret = is the fiscal year stock return,

DUM = is an indicator variable that takes the value one if  $R > 0$  and zero otherwise.

#### **Value Relevance**

Value relevance metric is based on the explanatory power from a regression of stock price on net income and equity book value. For the value relevance tests, financial reporting quality is estimated following the regression:

$$P_t = \beta_0 + \beta_1 BVPS_{it} + \beta_2 EPS_{it} + \epsilon_{it}$$

where

P = share price 3 months after fiscal year end

BVS = book value per share

EPS = earnings per share

Following prior research, to ensure accounting information is in the public domain, P is measured three months after fiscal year-end (Lang *et al.*, 2003; Lang *et al.*, 2006). The

first value relevance metric is the adjusted  $R^2$  value from the regression above while the second measure of value relevance is the beta coefficients from the model. The usage of  $R^2$  and beta coefficients depends on the objective of the study. If the objective is to find the overall value relevance, the  $R^2$  is employed but if the objective is to find out the relative value relevance of a variable then beta ( $\beta$ ) coefficient is a better value relevance metric. Higher  $R^2$  indicates higher value relevance, similarly, a more significant beta coefficient indicates higher value relevance.

#### **2.5.5 IASB Conceptual Framework approach**

The conceptual framework of IAS essentially defines the general principles which should characterize the process of preparing and presenting financial statements. In no case does it have the power of a standard and the basic purpose of its creation is to help and guide the IASB to develop or review existing and future IAS. Furthermore, it directs those preparing the financial statements to correctly apply the standards and is an additional tool for handling accounting issues not covered by existing standards. At this stage it should be noted that if an existing standard conflicts with the conceptual framework, then the standard shall prevail. Finally, it helps auditors and users to understand whether the financial statements and the information provided is consistent with IAS.

The qualitative characteristics are divided into fundamental and enhancing. The fundamental features are designed to separate the information provided to users in the following parts: Useful information or non-useful and/or misleading information. The two fundamental characteristics include relevance and faithful representation. The conceptual framework highlights (paragraph 17) that in order for the information to be useful, it must be characterized by both of the aforementioned characteristics, i.e. relevance and faithful representation.

The first fundamental characteristic is relevance, meaning that financial statements can and influence the decisions of users. In other words, they can be used as predictive values and/or confirmatory values. In addition, relevance may be affected by whether a piece of information is essential, i.e. whether its omission or incorrect portrayal affects the economic decisions taken by users. The second fundamental feature is the faithful representation/reliability of financial statements. The conceptual framework focuses on five specific features which should be reflected on the financial statements so as to be considered reliable. First, financial statements should present faithfully the economic events; secondly, they should not be the product of any prejudice whatsoever, that is to be neutral; third, should present the economic substance of economic events unconstrained by legal aspects; fourth, decisions taken by the management regarding uncertain events which require the exercise of judgment must be taken with caution and finally, the financial statements ought to be complete. In addition, the IASB defines four enhancing qualitative characteristics considered complementary to the fundamental characteristics. The main difference with the fundamental characteristics is that if the financial information is not characterized by the fundamental characteristics, then the enhancing characteristics alone cannot generate useful information to users. Specifically, the enhancing characteristics are comparability, timeliness, understandability and verifiability.

This study adopted this approach in measuring financial reporting quality. A disclosure checklist devised according to this model contained five sections with information relating to the qualitative characteristics of financial reports as given by the IFRS conceptual framework. Each major component of qualitative characteristic model was given a weight of 1-5 and the weighted average scores for each component was obtained as was done by Adedapo & Olawale (2019 and Ciocan *et al.*, (2021)<sup>[8]</sup>. The IASB checklist and its operationalization of each qualitative characteristics is given in appendix C.

$$\text{The IASB score index} = \frac{\text{Actual score}}{\text{Expected score}}$$

## 2.6 Theoretical Review

### 2.6.1 Agency theory by Jensen and Meckling (1976)

Agency theory was developed and put forward by Jensen and Meckling in 1976. Generally, the quality of financial reporting is a product of three major construct, the accounting system in place, the corporate governance mechanisms and the audit. Financial reporting quality on the other hand are constructs and attributes that provide an avenue for those involved in the financial reporting process to exercise some influence, which could be favourable or unfavourable. The need for financial reports evolved from the requirements of stewardship of the management about the firm resources under their control. This also covers the principal-agent relationship between the shareholders as owners and the managers as agents; in this regard, where the interests of management conflicts with the interests of the shareholders and the fact that management compensation often is based on reported earnings, managers have incentives to manage reported earnings (Dang, 2014), which in return affect the quality of the reports.

Amat and Gowthorpe (2023) opined that within the agency framework, it is both logical and inescapable that management behaviour will be self-serving, and because of this, agency theory can, therefore, provide a solid framework for the understanding of earnings management and managers behaviour (opportunistic theory). On the other hand, Schipper, (2019) sees the informational perspective as a key element underpinning the study of the financial reporting quality. According to him, a conflict is created by the information asymmetry that exists in complex corporate structures between a privileged management and a more remote body of stakeholders. Under such circumstance managers may choose to exploit their privileged position for private gain, by managing financial reporting disclosures in their own favour. The informational perspective assumes that accounting disclosures have an information content that possesses value to stakeholders in providing useful signals (ibid). However, this agency problem between the owners and managers led to the hiring of an auditor who provides independent assurance to corporate owners and other stakeholders (Watts & Zimmerman, 1986). Auditing in this context is considered as an assurance service as to the quality and credibility of financial reports prepared by the

managers. Similarly, the corporate governance mechanisms with regard to financial reporting quality have established an audit committee, which comprises of independent directors with accounting knowledge to ensure the integrity of financial reports. This is in addition to the work of external auditors who sometimes are held accountable for their actions in respect of the financial statements they audited.

This is the anchor theory for this research and is relevant because it focuses on the relationships between principals (for example, shareholders) and agents (managers) and how conflicts of interest between these parties can affect decision-making and outcomes (financial reporting quality). In the context of financial reporting quality for ICT firms, agency theory can be used to explain how firm characteristics such as size, profitability, and auditor type can affect the behaviour of managers, auditors, and other agents responsible for financial reporting.

### 2.6.2 Institutional theory by Meyer and Rowan (1977)

Institutional theory is an approach to understanding organizations and management practices as the product of social rather than economic pressures. It has become popular perspective within management theory because of its ability to explain organisational behaviours that defy economic rationality. Institutional theory proposes that organizations are influenced by the social norms, values, and beliefs of their environment, and that they conform to these institutional pressures in order to gain legitimacy and survive in their environment (Scott, 1995). In the context of financial reporting quality, institutional theory can be used to explain how external pressures from regulatory bodies, industry associations, and other institutional actors may influence financial reporting practices. For example, ICT firms may adopt certain reporting practices in order to conform to industry norms or to meet the expectations of regulatory bodies.

Jihadi *et al.*, (2021)<sup>[18]</sup> argued that often these "institutional myths" are merely accepted ceremoniously in order for the organization to gain or maintain legitimacy in the institutional environment. Organizations adopt the "vocabularies of structure" prevalent in their environment such as specific job titles, procedures, and organizational roles. The adoption and prominent display of these institutionally-acceptable "trappings of legitimacy" help preserve an aura of organizational action based on "good faith". Legitimacy in the institutional environment helps ensure organizational survival.

Therefore, institutional theory can provide a useful framework for understanding how external pressures may influence financial reporting quality for ICT firms. By conforming to institutional norms and expectations, ICT firms may gain legitimacy and enhance their reputation in their environment, which can contribute to the production of high-quality financial reports.

## 2.7 Related Empirical Review

Table 1 below presents the related empirical review.

**Table 1:** Related Empirical Review

Author & Year of Publication	Market studied	Methodology	Research gap	Findings
Handoyo, Mulyani, Ghani & Soedarsono (2023) <sup>[16]</sup>	Indonesia	-panel data regression	- manufacturing firms -2014 to 2021 -	The study found that strategic orientation positively and significantly influenced firm performance, with firms that adopted a proactive strategic orientation showing better performance than defensive ones.
Fagbemi <i>et al.</i> (2022) <sup>[13]</sup>	Nigeria	<b>Pooled Ordinary Least Squares (OLS) regression</b>	- C-suite bias - Industrial goods sector - 2002-2020	The findings indicated that C-suite tenure positively impacts capital structure decisions, suggesting that a longer tenure of C-suite executives in governing a company's affairs contributes to favourable capital structure choices.
Akenroye, Adegbe & Ajao (2022) <sup>[3]</sup>	Nigeria	-OLS	- Financial performance - 2011-2020	The findings showed that firms' attributes had a joint significant effect on both Net Profit Margin and Capital Employed Performance.
Jihadi, <i>et al</i> (2021) <sup>[18]</sup>	Indonesia	- Multiple Linear Regression Analysis	- -Done outside Nigeria - -2014-2019	The results showed that the ratios of liquidity, activity, leverage, and profitability were significant to firm value in accordance with the initial hypothesis of the study.
Aljinović & Bilić (2021) <sup>[5]</sup>	Croatia	Machine learning technique (MLT), M5 algorithm	- Done outside Nigeria - Stock market listing duration	The results indicated that profitability, stock market listing duration (in years), and company size positively influenced the level and extent of FRQ through voluntary disclosure of information in the annual financial reports of Croatian listed companies.
Ciocan, Carp & Georgescu (2021) <sup>[8]</sup>	Romania		- Done outside Nigeria - 2013 to 2019	The results suggested that companies with high-quality financial reports tend to be larger and have high operating cash flow rates, low provisions, and disclose more information. Additionally, these companies were audited by non-BIG 4 auditors.
Kalbuana J. (2021) <sup>[20]</sup>	Indonesia		- Done outside Nigeria - Earnings management - Leverage - ROA - 2014-2018	The findings indicated that firm size has little impact on earnings management, whereas leverage and profitability have a significant influence on earnings management.
Olowookere, Ajiboye & Ibrahim (2021) <sup>[25]</sup>	Nigeria	<b>Panel least square regression</b>	- Leverage - Board composition - Institutional shareholding - Liquidity - Consumer goods sector - 2014 to 2019	The results revealed that institutional shareholding, board composition, and liquidity had a significant and positive effect on financial reporting quality, while firm size had a significant and negative effect on financial reporting quality.
Dewi & Fachrurrozie (2021) <sup>[11]</sup>	Indonesia	<b>Moderated Regression Analysis</b>	- Done outside Nigeria - 2014-2016	The findings of the study indicated that profitability, liquidity, and asset structure have a negative and statistically significant impact on capital structure. Additionally, firm size was found to significantly moderate the relationship between liquidity and capital structure, but it did not moderate the effects of profitability and asset structure on capital structure. In conclusion, the study suggested that capital structure is influenced by profitability, liquidity, and asset structure, with the relationship between liquidity and capital structure being influenced by firm size.
Garcia & Herrero (2021) <sup>[14]</sup>	Europe		- Done outside Nigeria - Board gender diversity - Financial distress - 2002-2019	They found that the percentage of women directors was the most influential board characteristic in shaping capital structure decisions. A higher representation of women directors was associated with lower levels of leverage, cost of debt, and debt maturity. Furthermore, they observed that firms with a small and independent board, along with a higher proportion of women directors, had a reduced likelihood of financial distress. However, the presence of CEO duality did not significantly impact the likelihood of financial distress or capital structure decisions.
Mujiatun, Rahmayati & Ferina (2021) <sup>[22]</sup>	Indonesia	<b>Multiple linear regression analysis</b>	- Done outside Nigeria - 2016-2019	The findings revealed that both profitability and asset structure have a positive and significant impact on capital structure. The combined effect of profitability and asset structure on capital structure was statistically significant, with a positive beta value. Additionally, the individual effects of profitability and asset structure on capital structure were also significant, indicating a positive relationship.
Nguyen, Alpert & Faff (2021) <sup>[23]</sup>	Indonesia		- Done outside Nigeria	The study provided evidence indicating that, all else being equal, firms with more liquid bonds relative to their stock tended to have

			- Relative liquidity of bonds versus stock	higher leverage. Although the relationship between bond-stock relative liquidity and leverage was statistically significant, the findings suggested that its economic significance is relatively modest.
Rokhayati, Nirmala & Oktaviani (2021) <sup>[28]</sup>	Indonesia	<b>Multiple linear regression analysis with panel data</b>	- Done outside Nigeria - Sales growth - Consumer goods sector - 2015-2019	The findings revealed that firm size, asset structure, profitability, liquidity, and sales growth have a negative and significant impact on capital structure. These results suggested that as firm size, asset structure, profitability, liquidity, and sales growth increase, the level of the company's capital structure decreases.
Ali, Yassin & Aburaya (2020)	Egypt	<b>Regression analysis</b>	- Done outside Nigeria - Foreign listing - Firm age - Assets tangibility - Corporate governance - Tobin's Q	These findings revealed that firm characteristics affect corporate financial performance as evaluated by the company or the market.
Gharaibeh & Khaled (2020) <sup>[15]</sup>	Jordan	<b>Panel regression</b>	- Done outside Nigeria - Tangible assets - Business risk - 2014-2018	The study revealed the first evidence that the debt to assets ratio had a negative and significant impact on the profitability of services companies in Jordan.
Desvi, Suhendro & Masitoh (2020) <sup>[12]</sup>	Indonesia	Multiple regression analysis	- Done outside Nigeria - Financial performance - Property and real estate companies - 2016-2018	The findings indicated that return on assets, current ratio, company size, and asset growth collectively have a significant influence on the Capital Structure. However, when considered individually, return on assets and asset growth did not have a significant impact on the capital structure, whereas the current ratio and firm size demonstrated significant effects.
Panda & Nanda (2020) <sup>[26]</sup>	India	<b>Panel semi-parametric and non-parametric regression</b>	- Done outside Nigeria - Effective tax rate - Growth opportunity - Non-debt tax shield - Foreign investment - Government borrowing - Economic growth - Interest rate - Manufacturing firms	The findings revealed that each manufacturing sector has unique determinants of capital structure, including asset tangibility, growth opportunity, effective tax rate, non-debt tax shield, cash flow, profitability, firm size, foreign investment, government borrowing, economic growth, and interest rate. These firm-specific and macroeconomic variables exhibited a strong long-run equilibrium relationship with capital structure as a whole.
Jeroh (2020) <sup>[17]</sup>	Nigeria	<b>Panel data regression</b>	- Firm value - Earnings - Asset tangibility - Financial service sector - 2010-2018	The results showed that the selected corporate attributes (returns, revenue growth, earnings, leverage, company size, and asset tangibility) significantly influenced two measures of firm value (share price and Tobin's Q). However, no significant relationship was found between the selected corporate attributes and the third measure of firm value (share price to book value).
Nyabaga & Wepukhulu (2020) <sup>[24]</sup>	Kenya	STATA 11	- Done outside Nigeria - Financial performance - Asset quality - Capital adequacy - Financial sector - 2010 to 2018	The findings revealed a significant positive effect of capital adequacy on both returns on equity (ROE) and returns on assets (ROA). Bank size was also found to have a significant positive effect on both ROE and ROA. However, the effect of asset quality and leverage on performance was mixed, with a significant negative effect of asset quality on ROE and an insignificant negative effect on ROA, and a significant positive effect of leverage on ROE and an insignificant positive effect on ROA.
Pratiwi (2020) <sup>[27]</sup>	Indonesia	<b>Multiple regression</b>	- Done outside Nigeria - Capital structure - Firm value - 2014-2018	The results showed that capital structure and profitability evaluated the value of the company, while the size of the company did not oppose the value of the company. The results of this research were expected to provide benefits for the parties, investors, and further researchers.
Bashir (2019) <sup>[7]</sup>	Nigeria	<b>Multiple regression analysis</b>	- Growth opportunity - Non-debt tax shields - Food and beverage companies - 2008 to 2017	
Abdioğlu (2019) <sup>[11]</sup>	Turkey	<b>Fixed effect panel regressions</b>	- Done outside Nigeria - Financial distress - Return on equity	The findings revealed that financial distress levels increase with higher leverage and the use of short-term debt maturity. Firm size, return on equity (ROE), and asset tangibility were identified as influential factors in the association between leverage and

		(ROE) - Manufacturing firms - 2007-2017	financial distress. Furthermore, ROE and asset tangibility have effects on the relationship between financial distress and debt maturity.
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Source: Researcher’s Compilation, 2024

### 3. Research Methodology

This chapter presents the techniques and approaches that will be employed in carrying out the study, specifically to assess the effect of corporate attributes on financial reporting quality of listed ICT firms in Nigeria.

#### 3.1 Research design

This study adopted the ex-post facto research design. This design was suitable for this study because historical data were used and the study was conducted after the events had taken place.

#### 3.2 Population of the study

The population of the study shall consist of ICT firms listed on the floor of the Nigeria Exchange Group. As at 2022, there were 11 ICT firms listed on the floor of the Nigerian Exchange Group (NGX). These 11 ICT firms made up the population of this study. These listed ICT firms are listed below;

Table 2: ICT firms listed on the floor of Nigerian exchange group

S. No	Name of Company	Date of Incorporation
1	Airtel Africa Plc	July, 2019
2	Briclinks Africa Plc	February, 2021
3	Africa Prudential	August, 2012
4	E-Transact International	August, 2009
5	NCR Plc	May, 1979
6	Omatech Plc	May, 2008
7	Courteville Business Plc	April, 2009
8	Chams Plc	September, 2009
9	Computer Warehouse Group	November, 2013
10	MTN Nigeria Communication Plc	May, 2019
11	Triple Gee Plc	February, 1991

Source: Nigeria Exchange Group Factbook (2022)

#### 3.3 Sample size and sampling technique

The sample size proposed for this study was eight ICT firms purposively selected because the researcher deselected three (3) ICT firms that were listed after the study period of 2013. This was to ensure homogeneity in the data used. The three firms that are deselected include Airtel Africa — July 2019; Bricklinks Africa—February 2021 and MTN Nigeria- May 2019.

#### 3.4 Sources of data collection

Secondary data source was employed to generate data for analysis. The data for the ICT firms’ were sourced from Nigerian Exchange Group Fact Books and related companies’ annual financial reports for the periods covered in the study.

##### 3.4.1 Method of data collection

The data for the dependent variable of financial reporting quality was measured using IASB conceptual framework qualitative characteristics’ model. A disclosure checklist devised according to this model contained five sections with information relating to the qualitative characteristics of financial reports as given by the IFRS conceptual framework. Each major component of qualitative characteristic model was given a weight of 1-5 and the

weighted average scores for each component was obtained as was done by Adedapo & Olawale (2019) and Ciocan, Carp & Georgescu (2021) [8]. The IASB checklist and its operationalization of each qualitative characteristics is given in appendix C.

$$\text{The IASB score index} = \frac{\text{Actual score}}{\text{Expected score}}$$

#### 3.5 Data analysis technique

The data analysis technique that adopted for this study was the pool ordinary least square regression. The rationale for its usage is based on the following justifications: The data that were collected have time and cross-sectional attributes as well as across the sampled firms (cross-section); panel data regression provides better results since it uses large observation and reduces the problem of degree of freedom (Muhammad, 2012); it avoids the problem of multicollinearity and help to capture the individual cross-sectional (or firm-specific) effects that the various pools may exhibit with respect to the dependent variable in the model.

**Decision rule:** The decision rule for accepting or rejecting the null hypotheses shall be based on the probability values (p-Values). The null hypotheses shall be accepted if the p-values are more than 0.05 and rejected if the p-values are less than 0.05.

#### 3.6 Model specification

The model used in establishing the econometric relationship between corporate attributes and financial reporting quality was adopted from the study of Adedapo & Olawale (2019) and modified to suit this study as presented below; Financial reporting quality = f (Corporate attributes) Financial reporting quality = f (firm size, firm age, firm profitability, auditor type, asset tangibility) (1).

$$FIRQ_{it} = \beta_0 + \beta_1FMSZ_t + \beta_2FMAG_{it} + \beta_3FMPR_{it} + \beta_4AUDT_{it} + \beta_5ASTA_{it} + \mu_{it}$$

Where:

FIRQ = Financial reporting quality

FMSZ = Firm size

FMAG = firm age

FMPR = firm profitability

AUDT = Auditor

ASTA = asset tangibility

$\beta_0$  = Constant

$\beta_1$ -  $\beta_3$  = Slope Coefficient

$\mu$  = Stochastic disturbance

i = i<sup>th</sup> ICT

t = time period

#### 3.7 Measurement of variables

The variables used in this study; the independent variable being firm attributes (firm size, firm age, firm profitability, auditor type, assets tangibility) and the dependent variable - financial reporting quality were measured as given below.

**Firm size**

Firm size has many ways of measurement in the prior literature and these include total assets, sales volume, number of employees, market value of equity and book value of equity (Adedapo & Olawale, 2019; Putri *et al.*, 2020). In the study firm size was measured as a function of the entity’s total asset. (logarithm of total assets).

**Firm age**

This was measured using number of years from incorporation as was done by Musa *et al.*, (2019) and Fagbemi *et al.*, (2023). That is, it was measured as a logarithm of years of incorporation.

**Profitability**

Profitability is normally measured using profitability ratios such as return on asset (ROA), return on capital employed (ROCE), net profit margin (NPM), gross profit margin (GPM), return on capital equity (ROE) and asset turnover (AT) (Adedapo & Olawale, 2019; Lestari & Wulandari, 2019; 2020; Soyemi & Olawale, 2019). Profitability was measured in this study using return on assets (ROA).

**Auditor type**

This was measured using dummy variables proxied by ‘1’ if Big 4 auditors were engaged and ‘0’ if non-big 4 audit firms were engaged (Ciocan *et al.*, 2021<sup>[8]</sup>; Putri *et al.*, 2020).

**Assets tangibility**

This was measured as the ratio of fixed tangible assets to the

total book value of both tangible and intangible assets (Ciocan *et al.*, 2021<sup>[8]</sup>; Handoko, 2016).

**Financial reporting quality**

There have been various measures such as IASB conceptual framework qualitative characteristics, earnings quality via discretionary accruals and other accounting earnings attributes. Earnings quality includes such measures as earnings persistence and accruals; earnings smoothness; asymmetric timeliness and timely loss recognition; and target beating, which implies the distance of earnings from a target. Another measure of financial reporting quality in the literature is investor responsiveness to earnings. Measures in this category include earnings response coefficient (ERC) or the R square from the earnings-returns model as a proxy for earnings quality and relating the ERC to another construct such as auditor quality. In this study, financial reporting quality was measured using IASB conceptual framework qualitative characteristics of financial statement and a disclosure checklist, based on this was developed to guide the study.

**3.7.1 Operationalization of variables**

The variables used in this study were measured as given in Table 3 below;

**Table 3:** Operationalization of variables

S. No	Variable	Measurement	Apriori Sign	Source
1	Financial reporting quality (Dependent variable)	IFRS Qualitative Characteristics score index		IASB Conceptual framework (2018); Ciocan, Carp & Georgescu (2021) <sup>[8]</sup>
	Independent variables			
2	Firm size	Logarithm of the total asset	+	Adedapo & Olawale (2019); Ciocan, Carp & Georgescu (2021) <sup>[8]</sup>
3	Firm age	Logarithm of incorporation age	+	Fagbemi <i>et al.</i> , 2023)
4	Firm profitability	$ROA = \frac{PAT}{Average\ total\ Assets} \times 100$	+	Adedapo & Olawale (2019); Ciocan, Carp & Georgescu (2021) <sup>[8]</sup>
5	Auditor type	Dummy variable of ‘1’ if Big 4 auditor is engaged and ‘0’ if otherwise	+	Ciocan <i>et al.</i> , (2021) <sup>[8]</sup>
6	Asset tangibility (Independent variable)	Ratio of tangible fixed assets to total assets	+	Ciocan, Carp & Georgescu (2021) <sup>[8]</sup>

Source: Author’s research (2024)

**3.8 Limitations of the study**

A major limitation expected in this study is that the research focused on few measures of corporate attributes (firm size, firm age, firm profitability, auditor type, assets tangibility) leaving behind other proxies such as liquidity, capital structure and market capitalization. Another limitation of this study is that the research work focused on the listed ICT firms while the non-listed ICT firms and other sectors of the economy were considered. The implication of this is that the findings of this study would not be generalized to cover other sectors of the economy.

**4. Data Presentation, Analysis and Discussion of Findings**

This research examined the effect of corporate attributes on financial reporting quality of selected ICT firms in Nigeria. This section of the study presents the data used for this study, its analysis and discussion of findings.

**4.1 Data presentation**

The researcher used panel least square regression analysis to test the effect of ccorporate attributes on financial reporting quality of selected ICT firms in Nigeria. Before that, the researcher looked for discrepancies with the fundamental presumptions of the least square regression. Tests for linearity, normality, multicollinearity, autocorrelation, and homoscedasticity were among the diagnostic procedures performed. Additionally, the researcher ran some initial analyses that included correlation matrices and descriptive statistics. The analysis was conducted using the dataset.

**4.1.1 Descriptive statistics**

In this section, the study provided some basic information for both the explanatory and dependent variables of interest. Each variable was described based on the mean, standard deviation, maximum and minimum. Table 4 displays the descriptive statistics for the study.

**Table 4: Descriptive statistics** of the effect of corporate attributes on financial reporting quality of ICT firms in Nigeria

	FIRQ	FMSZ (N'000)	FMAG	FMPR	AUDT	ASTA
Mean	0.625833	7538507	30.50000	-0.064416	0.416667	0.288891
Median	0.700000	6318529	27.50000	0.008895	0.000000	0.193065
Maximum	0.950000	17687104	73.00000	0.120795	1.000000	0.821791
Minimum	0.200000	3595796	8.000000	-0.525591	0.000000	0.005165
Std. Dev.	0.212629	3493544	18.88188	0.156404	0.497167	0.257224
Skewness	-0.495859	0.963309	1.138130	-1.069412	0.338062	0.913663
Kurtosis	2.037538	3.130876	3.198429	3.205300	1.114286	-0.342796
Jarque-Bera	4.774591	9.322469	13.05183	11.54180	10.03265	27.46465
Probability	0.091878	0.009455	0.001465	0.003117	0.006629	0.000001
Sum	37.55000	4.52E+08	1830.000	-3.855969	25.00000	17.33316
Sum Sq. Dev.	2.667458	7.84E+14	21035.00	1.559435	14.58333	5.911147
Observations	60	60	60	60	60	60

Source: Author's computation (2024)

From Table 4 above, for the period under study, the minimum financial reporting quality (FIRQ) score was 0.20, maximum was 0.95 and the average score was 0.63. However, the standard deviation of 0.21 shows that financial reporting quality in the ICT sector is relatively low.

Reporting further, firm size (FMSZ) metric presents a minimum total asset of N3,595,796,000. Highest total assets recorded for the study period in the ICT sector was N17,687,104,000, the sector's average was N7,538,507,000. This implies that, the average total assets of these firms was N7,538,507,000. In conclusion, the statistics shows that the ICT sector is not well capitalized (in terms of assets) with a standard deviation of N3,494,543,000.

For firm age (FMAG), the average firm age (2013-2022) there was approximately 31 years old. Minimum and maximum of 8 and 73 years respectively were recorded. The standard deviation of 19 years tells us that the ICT sector is characterized by mostly young firms.

Looking at firm profitability (FMPR), the minimum return on assets for the study period was -53%, the highest return was 12% and on average, -6% was returned. The ICT sector has however been found to yield relatively high return on assets (standard deviation = 16%).

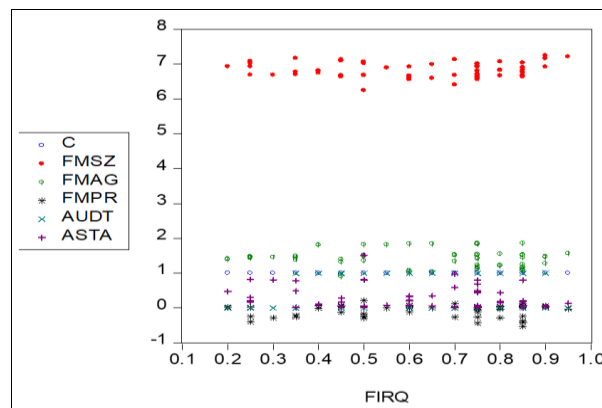
Moreso, half of the ICT firms use the services of the BIG 4 audit firms in Nigeria (SD = 0.50). we have minimum and maximum of 0 and 1 respectively due to the usage of dummy variables. Finally, asset tangibility (ASTA) ratio shows a minimum percentage of tangible assets in the asset structure was 0.5%, highest percentage of fixed tangible assets recorded was 82% and average was 29%. The standard deviation of 26% shows that the ICT sector is characterized by a good/moderate level of assets tangibility.

**4.1.2 Test of Regression Assumptions**

In social sciences, tests with idiosyncratic assumptions are commonly used as statistical procedures of the linear model. Statistical procedures and assumptions are used to evaluate the quality of a model. According to Greene (2003), and Darlington and Hayes (2017), linear models' quality can be tested based on linearity or additivity, normality, homoscedasticity, autocorrelation and multicollinearity.

**4.1.2.1 Linearity**

The linearity assumption requires a straight-line relationship between two variables (Nimon, 2012). Nonlinear or nonadditive data fitted to a linear model result in incorrect estimations or predictions. Violations of linearity or additivity are considered extremely serious as the model might not be fit for regression. This can be observed from the scatter graph below.



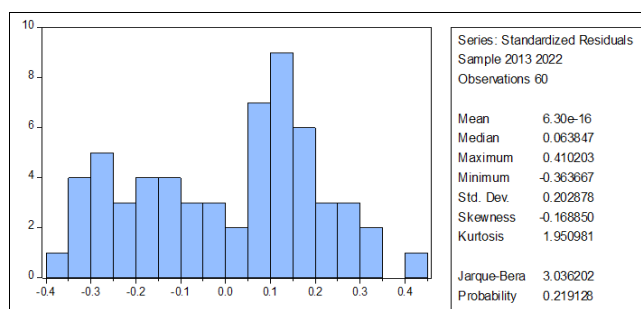
Source: Authors research (2024)

**Fig 2: S** Scatter graph of linearity assumption

From the scatter graph, it is possible to run a straight line through each variable used in this study. Therefore, the linearity assumption is not violated.

**4.1.2.2 Normality**

Regression models also assume that the error terms are normally distributed. This particular assumption needs to be met for the p-values of the t-tests to be valid. A violation of normality can distort confidence intervals for forecasts and cause difficulties in determining the significance of model coefficients. Although, as noted by Ord (1975), "not all were convinced of the need for curves other than the normal" (Pearson, 1905), by the turn of the century, the majority of informed opinion had accepted that population might not follow a normal distribution. Naturally, this resulted in the creation of tests to determine whether observations are normal. The general rule in this case is that the data is not normally distributed if its probability value is significant at 5%, otherwise it is. The Jarque-Bera statistics is however, shown below.





From the Jarque-Bera statistics above, the result shows that the dataset for this study follows a normal distribution as the p-value (0.219128) is greater than 0.05 which means the null hypothesis of normality is accepted.

**4.1.2.3 Test for autocorrelation**

The least square regression model assumes that there is no autocorrelation or serial correlation of the residuals in the model. To test this, the Durbin Watson statistics would be used (Durbin & Watson, 1950). For this assumption to hold, the Durbin Watson statistics must be somewhere between 1.5 and 2.5. Refer to the regression analysis table for this. The statistics show that there is no autocorrelation in the residuals (1.637722).

**4.1.2.4 No multicollinearity**

The regression model also assumes the absence of multicollinearity between the independent variables. It is a situation where one or more independent variable can be expressed as a combination of other independent variables. This can be detected by observing the Variance Inflation Factor (VIF). The VIF should be less than 10 for this assumption to hold. The diagnostic is shown below.

**Table 5:** Variance inflation factor analysis for the independent variables

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	1.653364	2205.934	NA
FMSZ	0.035404	2197.801	2.027890
FMAG	0.012763	34.91929	1.109558
FMPR	0.033424	1.335658	1.159039
AUDT	0.004695	2.609979	1.522488
ASTA	0.019484	5.230766	2.561034

Source: Author’s computation (2024)

From the VIF statistics, all the independent variables have VIFs of less 10. Therefore, there is no multicollinearity in the model.

**4.1.2.5 Homoscedasticity**

This holds that error terms of the regression model should have a constant variance across all levels of the independent variables (Smith, 2005). Homoscedasticity in E-views can be assessed through the Breusch-Pagan Godfrey test for heteroskedasticity. The null hypothesis for this test is there is no heterogeneity in the model and the alternate is that there is heterogeneity in the model, at 5% confidence level. The test is presented below.

**Table 6:** Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	8.521714	Prob. F(5,54)	0.0000
Obs*R-squared	26.46260	Prob. Chi-Square(5)	0.0001
Scaled explained SS	10.19200	Prob. Chi-Square(5)	0.0700

Source: Author’s computation (2024)

From the result above, the Obs R-squared value (26.46260) has a p value of 0.0001 (<0.05). Therefore, we reject the null hypothesis which implies that there is presence of heterogeneity in the model. The result shows that the assumption of homoscedasticity of the pooled OLS regression has been violated. Hence, the researcher re-specifies the model to control for this violation by employing either the fixed and random effects panel

regression as recommended by (Greene, 2003).

**4.2 Data Analyses**

**4.2.1 Correlation analysis**

Correlation analysis tests for the association (correlation) between the independent variables and the dependent variables of interest.

**Table 7: Correlation analysis** for the relationship between corporate attributes and financial reporting quality

	FIRQ	FMSZ	FMAG	FMPR	AUDT	ASTA
FIRQ	1.000000					
FMSZ	-0.206461	1.000000				
FMAG	-0.077199	0.213239	1.000000			
FMPR	0.036074	0.094152	-0.198639	1.000000		
AUDT	0.136951	0.421142	0.077083	0.178836	1.000000	
ASTA	-0.197223	-0.687319	-0.061381	-0.284867	-0.583530	1.000000

Source: Author’s computation (2024)

From the correlation matrix, firm size (FMSZ) and financial reporting quality (FIRQ) have a negative and weak association (-0.206461), firm age (FMAG) has no correlation with financial reporting quality (-0.077199), firm profitability (FMPR) also shows no correlation with financial reporting quality (0.036074), auditor type (AUDT) shows a positive and weak (0.13) correlation with financial reporting quality and finally, asset tangibility (ASTA) shows a negative and weak correlation with financial reporting quality. All variables have a perfect correlation with themselves which is normal.

**4.2.2 Regression analysis**

**4.2.2.1 Panel Fixed and Random Effect Regression**

Earlier on, the variable of this study showed presence of heteroskedasticity. As noted by Ajibolade and Sankay (2013), the fixed-effects model which is often the main technique for analysis of panel data does not account for heterogeneity in both the intercept and the slope. It accounts for individual heterogeneity only in the intercept. On the other hand, the random-effects model accounts for individual heterogeneity in both the intercept and the slope. In the light of the foregoing, this study employs the panel fixed and random effect regression to control the heterogeneity effect that is present in the pool OLS regression models but for this not to be voluminous, the Hausman test will be used to determine which technique is suitable for this study.

**4.2.2.2 Hausman Test**

To determine whether to use fixed effect regression or random effect regression for this study. The null hypothesis is that random effect model is suitable for the study and the alternate is that fixed effect model is suitable. The test is presented thus;

**Table 8:** Correlated Random Effects - Hausman Test

Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	9.555432	5	0.1603

Source: Author’s computation (2024)

The Hausman test shows a p value of 0.1602. So, the null hypothesis is accepted that Random Effects model is suitable for the data.

#### 4.2.2.3 Random Effects Model (REM) regression

**Table 9: Regression analysis** for the effect of corporate attributes on financial reporting quality

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.734828	0.867802	3.151444	0.0027
FMSZ	-0.289309	0.126988	-2.278243	0.0267
FMAG	-0.047414	0.076246	-0.621864	0.5366
FMPR	-0.088249	0.123386	-0.715224	0.4776
AUDT	0.199682	0.042243	2.431802	0.0046
ASTA	-0.260727	0.094204	-2.767673	0.0077
Effects Specification				
		S.D.	Rho	
Cross-section random		0.000000	0.0000	
Idiosyncratic random		0.143120	1.0000	
Weighted Statistics				
R-squared	0.389619	Mean dependent var	0.625833	
Adjusted R-squared	0.332074	S.D. dependent var	0.212629	
S.E. of regression	0.212062	Sum squared resid	2.428404	
F-statistic	12.06316	Durbin-Watson stat	1.637722	
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.389619	Mean dependent var	0.625833	
Sum squared resid	2.428404	Durbin-Watson stat	1.637722	

The random effect regression model above shows an F-statistic of 12.06316 with p-value of 0.00000 indicating that overall, the relationship between corporate attributes and financial reporting quality is a significant one. The model gave an R-squared value of 0.389619 which means that 39% of the changes in the dependent variable can be explained by the independent variables of this study. However, the unexplained part is captured in the error term.

#### 4.3 Test of hypotheses

The regression results in Table 9 is used to test the following hypotheses:

##### Hypothesis one

**H<sub>01</sub>:** Firm size has no significant effect on the financial reporting quality of listed ICT firms.

The results obtained from the random effects regression model in Table 9 revealed that firm size (Coef = -0.289; p-value 0.023) has a significant but negative effect on the financial reporting quality of ICT firms in Nigeria. Thus the null hypothesis was rejected and the alternate accepted implying that firm size has significant effect on financial reporting quality of listed ICT firms during the period under study. The null hypothesis was further rejected because the t-calculated (-2.278243) is greater than the critical value of t (2.004045) in absolute values. Therefore, firm size has a significant effect on the financial reporting quality of listed ICT firms in Nigeria.

##### Hypothesis two

**H<sub>02</sub>:** Firm age has no significant effect on the financial reporting quality of listed ICT firms.

The results obtained from the random effects regression model in Table 9 revealed that firm age (Coef = -0.047; p-value 0.537) has an insignificant negative effect on the financial reporting quality of listed ICT firms in Nigeria. Thus, the null hypothesis was accepted and the alternate was rejected. T-cal value (-0.621864) was also found to be less than the critical t (2.004045) which supports that the null should be accepted. It means that firm age has no significant effect on financial reporting quality of ICT firms in Nigeria.

##### Hypothesis three

**H<sub>03</sub>:** Firm profitability has no significant effect on the financial reporting quality of listed ICT firms.

The results obtained from the random effects regression model in Table 9 revealed that firm profitability (Coef = -0.088; p-value 0.478) has a negative an insignificant effect on the financial reporting quality of the listed ICT firms in Nigeria. Therefore, the null hypothesis was accepted while the alternate was rejected. The null hypothesis was further accepted because the t-calculated (-0.715224) is lower than the critical value of t (2.004045). This implies that firm profitability does not have any significant effect on the financial reporting quality of ICT firms in Nigeria.

##### Hypothesis four

**H<sub>04</sub>:** Auditor type has no significant effect on the financial reporting quality of listed ICT firms.

The results obtained from the random effects regression model in Table 9 revealed that auditor type [Coef = 0.200; p-value 0.0046]. This entails a significant positive relationship with financial reporting quality. On this note, the null hypothesis was rejected and the alternate was accepted. T-cal value (2.431802) was also found to be greater than the critical t (2.004045) which supports rejection of null hypothesis. This implies that auditor type has a significant effect on financial reporting quality of ICT firms in Nigeria.

##### Hypothesis five

**H<sub>05</sub>:** Firm asset tangibility has no significant effect on the financial reporting quality of listed ICT firms.

The results obtained from the random effects regression model in Table 9 revealed that firm asset tangibility [Coef. = -0.260; p-value = 0.008] has a significant negative effect on the financial reporting quality of ICT firms in Nigeria. Thus the null hypothesis was rejected while the alternate was accepted. The null hypothesis was further rejected because the t-calculated (-2.767673) is greater than the critical value of t (2.004045) in absolute terms. Therefore, firm asset tangibility has a significant effect but negative effect on the financial reporting quality of listed ICT firms in Nigeria.

#### 4.4 Discussion of findings

##### Firm size and financial reporting quality

The results obtained from the random effects regression model in Table 9 revealed that firm size (Coef = -0.289; p-value 0.023) has a significant but negative effect on the financial reporting quality of ICT firms in Nigeria. This means that a unit increase in firm size can significantly reduce the quality of financial reports (FIRQ) of the companies under study by 29% or; the higher the size of the firm, the lower the quality of her financial reporting, or; smaller firms have better financial reports' quality. This could be because larger firms often have more complex operations, diverse business segments, and a greater volume of transactions compared to smaller companies. Managing and accurately reporting financial information in a comprehensive manner can be challenging in such complex organizational structures. The sheer scale of operations can lead to an increased likelihood of errors, misstatements, or omissions in financial reports, which may compromise the overall quality of reporting. In larger firms, there may be greater scope for managerial discretion and agency conflicts that could undermine financial reporting quality.

Top management in larger companies may have more leeway to manipulate financial information or engage in earnings management practices to meet performance targets or mislead stakeholders. The dispersion of ownership and decision-making authority in large organizations can create agency issues that incentivize opportunistic behavior, potentially compromising the integrity of reported financial data. McInnis *et al.* (2021) stated that the complexity of larger firms can make financial reporting more challenging, and this can cause poor financial reports. This particular finding is in tandem with the finding of Olowookere, Ajiboye and Ibrahim (2021) <sup>[25]</sup> who found that firm size negatively affects financial reporting quality. This finding is contrary to that of Hope *et al.* (2023), who found that larger firms tend to have higher financial reporting quality than smaller firms; Soyemi & Olawale (2019), who found that large firms tend to produce high quality financial reports in non-financial firms in Nigeria; likewise, Shiyabola (2019) <sup>[29]</sup>. Further contrary findings exist in Olowokure, Tanko and Nyor (2016) who found no evidence on the relationship between firm size and financial reporting quality.

### **Firm age and financial reporting quality**

The results obtained from the random effects regression model in Table 9 revealed that firm age (Coef = -0.047; p-value 0.537) has an insignificant negative effect on the financial reporting quality of listed ICT firms in Nigeria. This means that there is no significant relationship between firm age and financial reporting quality. Over time, accounting and reporting standards evolve to adapt to changes in business practices, economic environments, and regulatory requirements. As a result, newer firms may benefit from updated reporting frameworks that address previous shortcomings, while older firms may have legacy reporting practices that are not reflective of current best practices. Advances in technology have significantly impacted financial reporting processes. Younger firms may be more adept at leveraging modern accounting software, data analytics tools, and digital reporting platforms, potentially leading to more efficient and accurate financial reporting compared to older firms that may be grappling with legacy systems and processes.

Guo *et al.* (2006) in their study established that firm age is not a significant predictor of financial reporting quality. Similarly, a study by DeFond *et al.* (2020) found no significant relationship between firm age and financial reporting quality in the US. The findings Guo *et al.* (2006) and DeFond *et al.* (2020) therefore, support the finding of this study. On the contrary, Choi and Park (2016) found that older firms were more likely to provide more accurate financial reports. Similarly, a study by Hope *et al.* (2023) found a positive association between firm age and financial reporting quality. Also, Narayanan *et al.* (2021) found that older firms have lower quality financial reporting.

### **Firm profitability and financial reporting quality**

The results obtained from the random effects regression model in Table 9 revealed that firm profitability (Coef = -0.088; p-value 0.478) has a negative and insignificant effect on the financial reporting quality of the listed ICT firms in Nigeria. This finding suggests that firm profitability does not have a significant effect on the financial reporting quality of companies under study. This could be because firms have some discretion in making accounting choices

within the bounds of accounting standards. Profitable firms can have their financial statement manipulated through aggressive accounting practices such as revenue recognition timing, expense manipulation, or asset valuation strategies. Such practices can distort the true financial performance of a company regardless of its profitable level. also. Weak governance practices, inadequate internal controls, or lack of independent oversight can compromise the reliability of financial reporting, regardless of a firm's profitability. Without proper checks and balances in place, there is a higher risk of errors, misstatements, or even fraudulent activities that could impair financial reporting quality.

Although this finding was insignificant, profit level has an influence on the manipulation of accounting accruals because managers may manage earnings to increase their bonus rewards (Ghofir & Yusuf, 2020) which supports its negative effect on financial reporting quality. We found an insignificant result which was also found in Wang *et al.* (2020) who found that the relationship between profitability and financial reporting quality is weak. Contrary to this finding, Lee *et al.* (2019) found that more profitable firms in the US are more likely to have higher quality internal controls over financial reporting. Also, Ahmed *et al.* (2013) found that more profitable firms tend to have higher levels of financial reporting quality, as measured by the accuracy and timeliness of their financial statements.

### **Auditor type and financial reporting quality**

The results obtained from the random effects regression model in Table 9 revealed that auditor type [Coef = 0.200; p-value 0.0046] has significant positive effect on financial reporting quality of listed ICT firms in Nigeria. This implies that firms that employ the services of the BIG 4 audit firms would have their financial reporting quality improved by 20%. That is firms that use the services of the BIG 4 audit firms, have better financial reporting quality. This could be because Big 4 firms have a vast pool of highly skilled professionals with deep technical knowledge and experience in auditing financial statements. Their expertise allows them to conduct thorough assessments of a company's financial reporting practices and identify any issues or discrepancies that may impact reporting quality. Big 4 firms adhere to stringent quality control standards set by regulatory bodies and professional organizations. These standards govern the audit process and ensure that auditors maintain the highest level of integrity, objectivity, and professional skepticism when evaluating a client's financial reporting. This commitment to quality control helps uphold the accuracy and reliability of financial information.

According to DeAngelo (2018), high audit quality which translates into high financial reporting quality is associated with large audit firms because of superior resources to perform audit, wide client network therefore non-dependent on a particular client than smaller audit firms. They also have greater incentives to protect their established reputation by performing high quality audits so as not to be associated with audit failure. All these can influence financial reporting quality. This finding (of this study) is in line with that of Abubakar, Ahmed & Ngadi (2023), Lin *et al.* (2021) and DeFond and Francis (2005) who found positive significant relationship between auditor type and financial reporting quality. The finding is however, contrary to the study of Umar (2022) who found a negative relationship between them.

### Asset tangibility and financial reporting quality

The results obtained from the random effects regression model in Table 9 revealed that firm asset tangibility [Coef. = -0.260; p-value = 0.008] has a significant but negative effect on the financial reporting quality of ICT firms in Nigeria. The reason for this could be because tangible assets are subject to depreciation, which can be a complex accounting process. The estimation of useful lives, residual values, and methods of depreciation for tangible assets may involve judgment calls and assumptions. If these estimations are not accurately made or if there's inadequate documentation of the rationale behind them, it can lead to errors in financial reporting and reduced quality of financial information. Valuing tangible assets, especially when they involve specialized properties or unique equipment, can be challenging. The use of outside appraisers or internal valuation models may introduce subjectivity and complexity into the estimation process. If there are inadequacies in the valuation methodologies or if there's a lack of market-based evidence to support valuations, it can compromise the accuracy of the reported asset values. This finding is supported by Arilyn (2020) and Dewi & Fachrurrozie (2021) [11] who found negative relationship between asset tangibility and financial reporting quality; and contrary to Frank and Goyal (2009), Akdal (2021) and Bashir (2019) [7] who found positive relationship. Further contrary finding exists in Handoko (2016) who found no relationship between them.

## 5. Summary, Conclusion and Recommendations

### 5.1 Summary of findings

The study investigated the effect of corporate attributes on financial reporting quality of ICT firms listed on the floor of the Nigerian Exchange Group from 2013 to 2022. The independent variable of the study being corporate attributes was proxied by firm size, age, profitability, auditor type and asset tangibility while the dependent variable being financial reporting quality was proxied by the IASB qualitative characteristics index. The major theories supporting this study were agency and institutional theories. The results of empirical findings with respect to each objective of the study are as follows:

1. The results obtained from the random effects regression model revealed that firm size (Coef = -0.289; p-value 0.023] has a significant but negative effect on the financial reporting quality of listed ICT firms in Nigeria. This means that a unit increase in firm size can significantly reduce the quality of financial reports (FIRQ) of ICT firms listed on the floor of the Nigeria Exchange Group by 29%.
2. The results obtained from the random effects regression model revealed that firm age (Coef = -0.047; p-value 0.537] has an insignificant negative effect on the financial reporting quality of listed ICT firms in Nigeria. This means that there is no significant relationship between firm age and financial reporting quality.
3. The results obtained from the random effects regression model in Table 9 revealed that firm profitability (Coef = -0.088; p-value 0.478] has a negative and insignificant effect on the financial reporting quality of the listed ICT firms in Nigeria. This finding suggests that firm profitability does not have a significant effect on the financial reporting quality of companies under study.

4. The results obtained from the random effects regression model in Table 9 revealed that auditor type [Coef = 0.200; p-value 0.0046] has significant positive effect on financial reporting quality of listed ICT firms in Nigeria. This implies that firms that employ the services of the BIG 4 audit firms would have their financial reporting quality improved by 20%.
5. The results obtained from the random effects regression model in Table 9 revealed that firm asset tangibility [Coef. = -0.260; p-value = 0.008] has a significant but negative effect on the financial reporting quality of ICT firms in Nigeria. This implies that asset a unit increase in assets tangibility would reduce financial reporting quality of the studied ICT firms by 26%.

### 5.2 Conclusion

Based on the findings of this study, it was concluded that firm attributes have significant effect on financial reporting quality of listed ICT firms in Nigeria. Specifically, it was concluded that firm size has a significant but negative effect on the financial reporting quality of listed ICT firms in Nigeria; firm age has an insignificant negative effect on the financial reporting quality of listed ICT firms in Nigeria; firm profitability has a negative and insignificant effect on the financial reporting quality of the listed ICT firms in Nigeria; and asset tangibility has a significant but negative effect on the financial reporting quality of ICT firms in Nigeria.

### 5.3 Recommendations

Based on the result of empirical findings the following recommendations were made for the study;

1. Management of information technology firms should implement robust internal controls, enhance transparency in financial disclosures, and ensure rigorous oversight since the insignificant effect could be as a result of complex operations, making it harder to maintain high-quality financial reporting.
2. While firm age may not directly impact financial reporting quality, it's essential that management of ICT firms should maintain vigilance regardless of age, and focus on updating reporting practices, adopt modern accounting standards, and conduct regular audits to ensure quality financial reporting. They should also invest in robust accounting and reporting infrastructure early so as to set the foundation for sustainable reporting quality as the firm matures.
3. Although profitability has been found to have a negative and insignificant effect on financial reporting quality, ICT firms should emphasize ethical behavior, integrity in financial reporting, and transparency in disclosing financial performance, regardless of current profitability levels. This focus can help build trust among stakeholders and enhance the overall quality of reporting.
4. The management of ICT firms should carefully select reputable and experienced audit firms to enhance the credibility and reliability of their financial statements. Furthermore, fostering open communication and cooperation with auditors can lead to improved reporting practices.
5. Finally, firm should reduce the amount of tangible non-current assets they hold as this had a negative influence on financial reporting quality. They can consider

holding more liquid or other intangible assets compared to tangible fixed ones. Or better still, firms with significant tangible non-current assets should implement measures to improve the transparency and accuracy of financial reporting to counteract the observed negative effect on financial reporting quality.

#### 5.4 Contribution to knowledge

This study contributes to knowledge by exposing the factors that enhance or reduce the financial reporting quality of ICT firms in Nigeria. The findings of this study underscore the importance of early attention to financial reporting practices in ICT firms. Also, this study indicates that indicate that profitability alone may not ensure high-quality financial reporting in ICT firms. This finding highlights the crucial role of external auditors in upholding reporting quality for ICT firms. Further research could explore the specific mechanisms through which auditor characteristics and practices influence reporting quality, and investigate any potential differences in the impact of auditor type across various subsectors of the ICT industry.

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