Audit Tenure, Audit Independence, Audit Committee Independence, Board Independence, and Audit Quality in the Listed Deposit Money Banks in Nigeria: The Moderating Effect of Institutional Ownership

Saratu Yakubu Haruna1, Hussaini Bala2*, Muhammad Sani Belo3
1Department of Business Education, Federal College of Education Katsina, Nigeria,
2Department of Accounting Faculty of Administrative Science and Economics, Tishk International University, Kurdistan-Region, Erbil Iraq,
3Department of Accounting, Faculty of Management Sciences, Kaduna State University, Nigeria
*Corresponding author: hussainumi2013@gmail.com
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ABSTRACT

The study examined the moderating effect of institutional ownership on relationship between audit tenure, audit independence, board independence and audit quality of listed deposit money banks (LDMBs) in Nigeria. The study population comprises 14 LDMBs on the Nigerian Stock Exchange as at 31st December, 2020. 13 LDMBs were used as sample of the study. Logit regression technique was used as a tool of data analysis. Findings of the study revealed that, in the direct relationship, audit independence, board independence and institutional ownership have significant effect on the audit quality of LDMBs in Nigeria. The finding of the moderated model of the study reveals that institutional ownership has a significant negative moderating role on the relationship between audit tenure, audit independence, board independence and audit quality of LDMBs. It is therefore recommended among others that listed deposit money banks in Nigeria should ensure that they consider long-term institutional shareholding since those with a long-term stake have the motivation to monitor management and thereby, requesting a better audit quality through BIG4 auditors.

Masa Kerja Audit, Independensi Audit, Independensi Komite Audit, Independensi Dewan, dan Kualitas Audit pada Bank Uang Simpanan Terdaftar di Nigeria: Efek Moderasi Kepemilikan Institusional

ABSTRAK

Studi ini menguji efek moderasi kepemilikan institusional pada hubungan antara masa kerja audit, independensi audit, independensi dewan direksi dan kualitas audit bank uang simpanan/ BUS (deposit money banks/ LDMBs) yang terdaftar di Nigeria. Populasi penelitian terdiri dari 14 BUS di Bursa Efek Nigeria pada 31 Desember 2020. 13 BUS digunakan sebagai sampel penelitian. Teknik regresi logit digunakan sebagai alat analisis data. Temuan penelitian mengungkapkan bahwa, dalam hubungan langsung, independensi audit, independensi dewan dan kepemilikan institusional berpengaruh signifikan terhadap kualitas audit BUS di Nigeria. Temuan dari model penelitian yang dimoderasi mengungkapkan bahwa kepemilikan institusional memiliki peran moderasi negatif yang signifikan pada hubungan antara masa kerja audit, independensi audit, independensi dewan dan kualitas audit bank-bank uang simpanan yang terdaftar di Nigeria. Penelitian ini merekomendasikan agar BUS yang terdaftar di Nigeria dapat memastikan bahwa kepemilikan saham institusional jugak panjang menjadi fokus pertimbangan karena mereka memiliki motivasi untuk memantau manajemen dan mengusulkan penggunaan BIG4 untuk memperbaiki kualitas audit yang lebih baik.

1. Introduction

The goal of most business organizations is to survive and gain competitive advantage in their industry. Hence, businesses embark on expansion as the strategy for growth and survival. However, growth and expansion come with a lot of responsibility and commitment to the organization.
According to Amahalu and Beatrice (2017), depending on how the firm seeks to expand or grow, it tends to make certain decisions on the type of gearing that will be required. When the enterprise is designed by equity, then it leads to an increase in the percentage of stockholders, this needs improved clarity. In other words, expansion of the firm by equity means more ownership (shares) of the firm, more information needs and more interest to be protected. In other words, expansion of the firm by equity means more ownership (shares) of the firm, more information needed and more interest to be protected. Majorly, this increased need for transparency lies with the financial and accounting dealings of the firm. This is because, the true nature of the health status of the firm is rooted deeply in its financial capabilities and such information can only be derived from the firm’s financial report (Al-Matari et al., 2019).

The struggle to satisfy those individual interest most of the time leads to lack of transparency in the reporting of the firm’s financial standing which is done through the annual financial report. It is therefore important for the financial report to depict the financial standing of the firm and getting a clear picture (certified) of the firm’s financial position, which can only be derived when an external party who is independent of the firm comes in to check the books of the firm. Such persons that provide the services of scrutinizing and finding a balance between the firms’ presented reports and the real fact are referred to as auditors. This, therefore, portrays the important function of the auditor in the delivery of quality audit.

Audit quality was seen as the possibility that an auditor will discover an anomaly in the financial statement and then reveal it for transparency (Enofee et al., 2013). Audit quality has also been defined as the possibility of efficient recognition of inconsistencies between the organizations’ provided statement and the true quality of the statement (Chen et al., 2019). This implies that audit quality can be arrived at, if the auditor is able to compare between the favorable report provided by the firm and the true picture of the situation or the project.

Audit scholars have advocated that the main aim of an audit exercise is to provide a qualitative report (Afesha, 2015). Based on this assertion, the auditor is expected to provide quality report, which can only be obtained through exact conformity to guidelines of high-quality audit. The delivery of qualitative audit report however, is affected by certain factors such as the auditor independence (Aliu et al., 2018), audit tenure (Blandon-Garcia, Argiles, & Ravenda, 2020), and audit firm size (Fakhroddin & Ahmad, 2017). Almutairi (2013) observed that institutional ownership has also been seen lately as a component that plays an important impact in organizations’ quality audit.

Though firms have come to the understanding of employing the services of auditors to gain the trust of stakeholders, there have been issues reported globally and locally in Nigeria about the lack of transparency and increased misappropriation of funds (Ayorinde et al., 2019). Some deposit money banks like Standard Chartered, Stanbic IBTC, Citibank and Diamond bank have recorded a share of issues related to violations of laws and regulations. Consequently, the CBN sanctioned these banks for issues related to counterfeit concerning their foreign exchange dealings in 9 years (2007 - 2015), which amounts to 5.87 billion NGN (Adeniji, 2021).

The Nigerian Deposit Money Banks have portrayed a significant impact in the improvement of the economy of Nigeria by carrying out their functions and rendering services which include the movement of funds from the excess to the deficit units of the economy. As the country continues to seek for investment to boost the economy, confidence will have to be rebuilt in the investors by checkmating fraudulent activities carried out by some DMBs and ensuring clarity is maintained. This, therefore, makes DMBs an interesting domain to carry out this study on.

Looking at the studies conducted on the determinants of audit quality, it is discovered that
there have been more of such studies in other countries like Indonesia and Ethiopia. Looking at the few conducted in Nigeria, it is discovered that they have limited their study periods to 2015. However, much has happened during the periods of 2015 to date (like the case of Stanbic IBTC, 2015 and Diamond bank, 2018) which can give a different finding in contrast to their findings. This therefore necessitated this study.

Furthermore, Several studies that were undertaken on the effect of determinants of audit quality and audit quality (such as Blandon-Gracia et al., 2019; Azizkhan et al., 2018; Qawqzeh et al., 2018; Sunday 2019; Aliu et al., 2018; Zamzami et al., 2017; Ndubusi et al., 2017; Ashrafi et al., 2017) have discovered inconsistent results, this, therefore necessitated the use of institutional shareholdings as a mid variable to moderate the relationship that exists between audit quality and its determinant. According to Baron and Kenny (1986) moderator variable is introduced when there is conflicting findings between independent variable and dependent variable.

The use of institutional ownership as a moderator makes this study distinct from previous studies because there are no other studies that used institutional ownership as a moderator on the relationship between the determinants of audit quality and audit quality. Institutional ownership is used in this study as a moderator because they require high quality external audits as a form of investor protection. Furthermore, institutional shareholders can look into the health of an enterprise because they have the required experience and knowledge in running firms since they also sit on board of other enterprises (Vivandari & Fitriany, 2018).

The study is therefore sought to determine the moderating effect of institutional ownership on the determinants of audit quality in the listed deposit money banks in Nigeria. Examine the effect of audit tenure, audit independence, audit committee independence and board independence on audit quality of listed DMBs in Nigeria.

This study would be of relevance to managers of the listed DMBs, as it will provide them with the needed view on the roles played by audit independence, audit tenure, audit committee independence, board independence and institutional ownership on the quality of their audit. Other financial institutions in the financial sector can also benefit from this study, as the study would also provide them with the types of components of audit that can bring about audit quality. This will help them in making decisions about the level of independence their auditors can have. The study will also build on the existing writings on the subject matter, as it will provide researchers and practitioners with the needed literature to back up their claims and improve their endeavors.

2. Literature review and theoretical development

This section looks at related writings on institutional ownership, audit quality determinants and audit quality as well as the theoretical framework of the study.

Audit tenure and audit quality

Qawqzeh et al. (2018) investigate the effect of audit tenure and audit rotation on audit quality in Malaysia. The research employed the use of a literature review approach. Audit tenure was discovered to have an influence on audit quality. The study made use of literature review to draw its findings and conclusions, there is need for an empirical study to support its findings. Similarly, Azizkhan et al. (2018) analyse the impact of audit quality and audit firm tenure using panel data for the periods of 2005 to 2014 from the Iranian audit market. The data was analysed using regression and it was discovered that the possibility of misrepresentation is lowest in the initial two (2) years of audit tenure. Blandon et al. (2016) study audit firm tenure and audit quality in Europe. The study discovered that auditors of firms that have ten years tenure have a higher audit quality than auditors of firms that have less than ten years tenure. Increasing the data to 10 years like that of this study,
might increase the discovery of the study. Recently Anggraini et al. (2022), have documented a positive significant effect between audit tenure and audit quality of companies in Indonesia.

However, proponents of agency theory have argued that audit tenure mitigates agency cost. It is therefore expected that audit tenure will minimize agency conflicts. However, the belief that longer audit tenure leads to decrease in audit quality calls for concern. This has been confirmed by previous studies that have established that longer audit tenure increases the likelihood of compromising audit independence resulting in reduced audit quality. Gracia-Blandon and Argiles-Bosch (2016) supported mandatory audit rotation. They argued that financial reporting quality deteriorate with audit tenure extension. Moreover, Azizkhani et al. (2018) revealed lower misstatements in financial statements of firms in the first 2 years of audit tenure. On the contrary, Zhang et al (2016) found no evidence of loss of independence for long tenure. Therefore, it is hypothesized that:

\[ H_1: \text{Audit tenure has a significant effect on audit quality of LDMBs in Nigeria} \]

**Auditor independence and audit quality**

Sunday (2019) investigates the impact of auditor’s independence and quality of financial reports in Nigeria between the periods of 2013 to 2017. The data which was collected from the annual financial information of the manufacturing firms was analyzed using descriptive statistics, correlation and regression. Looking at this study, it is seen that more insights can be gained if the data is increased and also, employing some post-tests can increase the accuracy of the findings. Similarly, Aliu et al. (2018) analyses the influence of the auditors’ independence on quality audit in the Nigerian listed oil and gas companies from 2007-2016. Nine companies were used as the sample out of the 14 firms listed in the downstream sector. The study used descriptive statistics, correlation and binary logit regression. The study revealed a positive effect between auditor’s independence and quality audit. Zamzami et al. (2017) analyses the influence of audit independence on audit quality in Indonesia. The research made use of a survey design and the data was collected using questionnaires. The study’s population was drawn from the public accounting firms in Indonesia. The data was analysed through multiple regression. The study discovered that auditor independence significantly affects audit quality. The study did not conduct a reliability test on the instrument which is a vital measure in ensuring that the instrument used depicts the concepts studied.

Yakubu and Williams (2020) argue that auditor independence boosts financial reporting transparency and the audit report must be totally free from material misstatements. Kukeng and Iortule (2017) established a strong association between audit quality and auditor’s independence with empirical data from the review of related literature. In addition, Enofe et al. (2013) documented that as auditor’s independence increases, audit quality also improves. However, Zayol et al. (2017) argued that the major threats to auditor independence are the fees perceived by the auditor for audit services. They opined that as the auditor client relationship elongates, the auditor may develop close relationship with the client and become more likely to act in favor of management, resulting in reduced audit quality. It is hypothesized that:

\[ H_2: \text{Audit independence has a significant effect on audit quality of LDMBs in Nigeria} \]

**Audit committee independence and audit quality**

Oluwayemisi et al. (2021) examines audit committee characteristics and audit quality in Nigerian oil and gas sector for the period 2009-2018. The population of the study comprised all the 12 listed oil and gas firms from which 10 firms were randomly selected as sample. Secondary data was acquired from the published financial information of the firms for the years 2009-2018 and data was analyzed through logistic regression. The findings revealed that audit committee size has significant positive impact on audit quality while audit committee meetings have insignificant positive
effect on audit quality. The study did not show the measurement of variables which could have justified the technique used in the analysis and the study period was also limited to 2018. Haque et al. (2019) established a significant positive effect of audit independence on audit quality. The study employed the use of exploratory approach and data was collected from listed insurance firms on Dhaka stock exchange for the period 2017. The short fall of this study is that its findings are based on data for only one year which however may change over time.

Bako (2018) study the outcome of corporate governance on quality financial reporting in Nigeria. The data was collected for the periods 2009-2013 from four listed chemical and paint enterprises in Nigeria. The study revealed insignificant association between audit committee independence and quality audit. The data can be increased to ten years to be able to get more clarity on the trends within the data.

Agency theory supports the view that an effective audit committee should be established to oversee audit quality (Rickling, 2014; Jensen & Meckling, 1976). Hossain and Mohammed (2021) found that audit committee play an oversight function and therefore, independence of audit committee members is considered to be an important requirement for its effectiveness. In addition, Klein (2002) argue that provided the audit committee has sufficient independence and expertise, it can be regarded as effective means that can reduce information flow and improve audit quality. Studies based on agency theory believed that audit committee independence improve effective supervision of management activities towards financial reporting (Adhikary & Mitra, 2016). However, Klein 1998 argued that when stronger corporate governance mechanisms area already in place, the need for an independent audit committee may be declined. It is therefore hypothesized that:

H₃: Audit committee independence has no significant effect on audit quality of LDMBs in Nigeria.

Board independence and audit quality

Kaawaase et al. (2021) found that board independence is not a significant indicator of internal reporting quality. The sample size of the study comprised 24 commercial banks, 29 insurance firms, 5 micro deposit taking institutions and 4 credit institutions. Data collected was for the period March 2019 – August 2019. The above findings may not be widespread as a result of the restricted number of months, which may generate doubt as to the objectivity and reliability of the findings due to the fact that a data for only 6 months cannot provide a strong image of the required results.

Ogoun and Perelayefa (2020) ascertain the influence of corporate governance in determining the audit quality of firms in Nigeria. The study utilized 71 non-financial firms for the time frame 2008-2015. The outcome disclosed that board independence is negatively connected to audit quality. The period of this study was also restricted to 2015. Yekini et al. (2015) ascertain the influence of board independence on the quality of community disclosure in the UK. The study used panel data approach where 350 companies listed on the UK FTSE were used. OLS regression was used to analyse the collected data. The result disclosed that board independence is crucial to quality disclosure. The study leaves room for looking at another dependent variable to build on the findings.

Fama and Jensen (1983) have theorized that the board of directors is the best control mechanism to monitor activities of management. They provided proof that higher ratio of non-executive directors on the board leads to improved monitoring. In addition, previous studies have argued that an effective board is linked with board independence. However, evidence of non-executive directors not performing up to expectation in firms lead to an opposing effect on the board monitoring ability (Bakare, 2019). It is hypothesized that:

H₄: Board independence has no significant effect on audit quality of LDMBs in Nigeria.
Institutional ownership and audit quality

Chen et al. (2019) studied the effect of institutional investors on portfolio firms’ audit quality in Russell. The study employed regression analysis and discovered that institutional ownership increases significantly the audit quality in Russell. The technique of analysis can be improved by the use of logit regression since the dependent variable in the study is a dichotomous variable. Al-Matari et al. (2019) examines the influence of government ownership, foreign ownership, institutional ownership and audit quality on firm performance of Oman listed companies. The study employed a conceptual approach to understand the direct association between the variables. Audit quality was employed as a moderator on the relationship of ownership structure and return on asset. The study discovered a relationship between ownership structure and performance.

The above study made use of audit quality as a moderator, so it gives room for audit quality to be used as a dependent variable. Odudu, Terzungwe and Joshua (2018) examine the impact of institutional and block-holder ownership on quality audit in Nigeria. The research was conducted using the manufacturing firms that were listed on the Nigerian stock exchange. 32 firms were sampled from a population of 59 manufacturing firms, and their financial reports were used to source the data used. Logisitc regression was used in analysing the data. The study discovered a significant negative effect of institutional shareholding and managerial shareholding with audit quality of the Nigerian DMBs. The study made use of panel data of five years which can be increased to 10 years.

The relationship of ownership structure can best be explained by agency theory. Ownership structure is one of the most important corporate governance mechanisms that influences the decision of the board of directors (Dong & Zhang, 2008). However, Odudu et al. (2018) opined that institutional investor are curious in generating more returns from their shareholdings and as such, they reduce the possibility of hiring skilled auditors resulting to loss in audit quality.

In addition, Han et al. (2013) argued that long-term institutional shareholders request greater audit quality to upgrade corporate monitoring and short-term institutional shareholding is positively linked with higher level of audit threat. They found that only certain types of institutions – those with a long-term stake in the organization have the motivation to oversee the activities of the management and thereby, request a greater quality audit by a big 4 auditor. In line with the foregoing, it is therefore hypothesized that:

H5: Institutional ownership has a significant moderating effect on the determinants of audit quality of LDMBs in Nigeria.

Theoretical framework

Agency theory and stakeholder theory are adopted to underpin this study. Agency theory is of the opinion that from the on-set, companies are formed by certain people who happen to be the company’s executives but as time forges ahead, the companies tends to expand. As such, managers are appointed and the anticipation is that the managers will carryout their responsibilities to the best of their ability and not forgetting to keep the interest of the firm at the heart of all. Hence, a relationship is born and will exist between the managers and the owners. This relationship is the agency relationship (Amahalu & Beatrice, 2017).
According to Afesha (2015), agency relationship is a contract and it is a must that managers must act in the greatest interest of the owners, however, this is close to impossible. This is due to the fact that the decisions made by managers affect their personal life as well as the owners. So, by all means they try to make decisions that will favour them. Alongside this, there are other stakeholders such as regulators, creditors, investors, etc who have concern in the audit and agency theory does not make a comprehensive description of their anticipations. That is why the simple agency theory need to be extended to provide the interests and anticipations of these other parties and that is why the stakeholder theory was adopted.

The stakeholder theory proposes that every organization has more than one relationship to consider (principal - agent) but has to consider other people that have stakes in the organization. These people include the society where the business resides, the creditors of the business, the government and others (Ndubisi & Ezechukwu, 2017). The stakeholder theory proposes that in order for a firm to remain successful, the information to be provided must represent the activities of the firm so that the stakeholder’s trust can be built (Ndubisi & Ezechukwu, 2017).

In order to bring out the forms of relationship that the variables will share in the study, it is therefore important to create the theoretical framework of the study. This relationship is therefore presented in Figure 1.

![Figure 1. Theoretical framework](image)

### 3. Research method

The study adapted a historical and descriptive research design. The study used panel data since the data is a mixture of cross-sectional and time series data. The population of the study comprised the listed DMBs in Nigeria stock exchange (NSE) as at 31st December 2020 which were 14 in number. The study employed purposive method of sampling, to arrive at the sample therefore, the study filtered out any bank that does not have a complete financial statement up to the period of study which makes the sample of the study to be 13 listed DMBs.

The source of data for the study is secondary data extracted from the annual financial reports of the listed DMBs. The information was sourced for a period of 10 years from 2011 to 2020. Logit regression was used as the technique of data analysis. The justification for this technique was that the dependent variable was measured in binary.
Table 1. Variable measurement

<table>
<thead>
<tr>
<th>Variables</th>
<th>Acronym</th>
<th>Measurements</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit quality</td>
<td>AUDQ</td>
<td>Dummy value of 1 if a firm use any of the big 4 auditor firms and 0 for otherwise.</td>
<td>Ndubisi and Ezechukwu (2017).</td>
</tr>
<tr>
<td>Audit tenure</td>
<td>ATEN</td>
<td>Number of years spent as auditor of a firm. $ATEN = F &gt; 3 = 1, else 0.$</td>
<td>Ndubisi and Ezechukwu (2017).</td>
</tr>
<tr>
<td>Audit independence</td>
<td>AINDP</td>
<td>The natural log of audit fees paid by dmbs.</td>
<td>Tobi, Osasrere and Emmanuel (2016).</td>
</tr>
<tr>
<td>Audit committee independence</td>
<td>ACI</td>
<td>Number of non-executive / total directors on the committee.</td>
<td>Haque et al. (2019)</td>
</tr>
<tr>
<td>Board independence</td>
<td>BI</td>
<td>Number of independent directors / total directors on board.</td>
<td>Ibn and Bala (2015)</td>
</tr>
<tr>
<td>Institutional ownership</td>
<td>INSO</td>
<td>Number of outstanding shares acquired by institutional stockholders in a firm at the end of the financial year.</td>
<td>Tahir et al. (2015).</td>
</tr>
</tbody>
</table>

Source: Constructed by authors (2021)

The model that steered this study was drawn from a multiple regression equation, which indicated that the determinants are a function of audit quality and are moderated by institutional ownership.

$$AUDQ_{it} = \beta_0 + \beta_1 ATEN_{it} + \beta_2 AINDP_{it} + \beta_3 ACI_{it} + \beta_4 BI_{it} + \beta_5 INSO_{it} + \beta_6 ATEN_{it} \times INSO_{it} + \beta_7 AINDP_{it} \times INSO_{it} + \beta_8 ACI_{it} \times INSO_{it} + \beta_9 BI_{it} \times INSO_{it} + \varepsilon_{it} \quad - - - (1)$$

The first model above depicts the effect between the independent variables (audit tenure, audit independence, audit committee independence, board independence & institutional ownership) and audit quality. It shows that audit quality of firms is a function of the variables. Conversely, since the study looks at how the relationship is moderated by the effect of institutional ownership, then a model was developed for it.

$$AUDQ_{it} = \beta_0 + \beta_1 ATEN_{it} + \beta_2 AINDP_{it} + \beta_3 ACI_{it} + \beta_4 BI_{it} + \beta_5 INSO_{it} + \beta_6 ATEN_{it} \times INSO_{it} + \beta_7 AINDP_{it} \times INSO_{it} + \beta_8 ACI_{it} \times INSO_{it} + \beta_9 BI_{it} \times INSO_{it} + \varepsilon_{it} \quad - - - 2$$

The second model of the study above depicts that the relationship shared between the determinants and audit quality irrespective of the outcome can be moderated by the effect of institutional ownership. In other words, the link between audit tenure, auditor independence, audit committee independence, board independence & audit quality is dependent on a third variable which is the moderator (institutional ownership).

Where:

| AUDQ  | = Audit quality               |
| ATEN  | = Audit tenure                |
| AINDP | = Audit independence          |
| ACI   | = Audit committee independence |
| BI    | = Board independence          |
| INSO  | = Institutional ownership     |
| $\beta_0$ | = Constant                  |
| $\beta_1 - \beta_4$ | = Beta coefficient of the independent variables |
| $\varepsilon$ | = Error term          |
4. Results and discussion

Table 2. Descriptive statistics of continuous variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Median</th>
<th>Minimum</th>
<th>Maximum</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AINDP</td>
<td>17.966</td>
<td>18.55</td>
<td>11.23</td>
<td>20.34</td>
<td>2.133</td>
</tr>
<tr>
<td>ACI</td>
<td>0.508</td>
<td>0.50</td>
<td>0.05</td>
<td>1.00</td>
<td>0.085</td>
</tr>
<tr>
<td>BI</td>
<td>0.158</td>
<td>0.14</td>
<td>0.00</td>
<td>0.47</td>
<td>0.094</td>
</tr>
<tr>
<td>INSO</td>
<td>38.177</td>
<td>33.22</td>
<td>6.60</td>
<td>90.36</td>
<td>22.904</td>
</tr>
</tbody>
</table>

Source: STATA 14.0 Output, 2021

Table 2 presents the descriptive statistics of the continuous variables. The outcome indicates that the mean value of audit independence (AINDP) stood at approximately 17.97 million naira, this represents the average cost of audit fees paid to auditors by the listed DMBs banks. The minimum value of AINDP is 11.23 and the maximum value 20.34.

This implies that the minimum value of audit fees paid by the sampled banks is 11.23 million naira and the maximum audit fees paid is 20.34 million naira by the sampled banks within the period of the study. This implies that some banks pay less than the essential fee as their audit fees that was estimated to be paid by the individual firms. This is because, according to Oladipupo et al. (2016) an audit fee is said to be regular when the chargeable audit fee within an industry is equal to the chargeable audit fee paid to a particular client. However, the chargeable audit fee may be below or above the chargeable audit fee in the industry. As such, the irregular audit fee is the audit fee below or above the average audit fee in the industry while regular audit fee is the average audit fee in the industry.

Audit committee independence (ACI) has a mean value of 0.508, it shows that on the average, not less than 50 percent of the audit committee are non-executive directors. Also, the Table shows a minimum of 0.05 and a maximum of 1. This means that the smallest proportion of non-executive directors in the audit committee is 0.05 which is higher than zero. The largest proportion is 1 suggesting that some audit committees have 100% non-executive directors.

It was observed that in the early years of the study from 2011 to 2013, some of the banks had only 3 non-executive directors in the audit committee while some had 4 to 5 members. From the year 2014, most of the banks complied with section 359 (3) of CAMA of 3 non-executive directors and 3 representatives of shareholders of the bank in the audit committee.

Board independence (BI) shows a minimum of 0 and a maximum of 0.47. This implies that there are some banks that do not have any independent director in the composition of the board while some banks have 47 percent of the board as independent directors. BI also shows a mean of 0.157 which indicates that approximately 16% represents the average composition of independent directors on the board in the LDMBs in Nigeria. It was also discovered that in the early years of the study, some banks do not have any independent director on the board.

Institutional ownership (INSO) shows an average of 38.18. This implies that on the average, institutional investors own 38 percent of the shares of listed DMBs in Nigeria for the period of this review. The minimum and maximum showed 6.6 and 90.36 which indicate that the minimum share owned by institutional investors is 6.6 percent and the maximum is 90.36 percent.
Table 3. Descriptive statistics for dichotomous variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDQ</td>
<td>Obs. 130</td>
<td>8</td>
<td>122</td>
</tr>
<tr>
<td>ATEN</td>
<td>130</td>
<td>41</td>
<td>89</td>
</tr>
</tbody>
</table>

Source: STATA 14.0 Output, 2021

The study used frequencies and percentages to interpret the result since the variables are measured in binary and has only one chance of being either 0 or 1. Audit quality (AUDQ) in Table 3 shows a frequency of 8 and 122, it is seen that there has been about 94% engagement of the services of the big 4 audit firms by the LDMBs while 6% were audited by the non-big 4 audit firms.

Audit tenure (ATEN) also show that auditors are not frequently changed, this was recognized by 32% of change and 68% of retaining the services of the auditors for more than 3 years.

Table 4. Correlation matrix

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>AUDQ</th>
<th>ATEN</th>
<th>AINDP</th>
<th>ACI</th>
<th>BI</th>
<th>INSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDQ</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATEN</td>
<td>-0.036</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AINDP</td>
<td>-0.025</td>
<td>0.113</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACI</td>
<td>-0.051</td>
<td>0.047</td>
<td>-0.136</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>0.096</td>
<td>0.142</td>
<td>0.027</td>
<td>-0.026</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>INSO</td>
<td>-0.156</td>
<td>0.075</td>
<td>-0.384</td>
<td>0.075</td>
<td>-0.154</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Source: STATA 14.0 Output, 2021

A multicollinearity test was conducted to test if high correlation exists between the independent variables. The results indicate a low correlation coefficient signifying absence of multicollinearity among the independent variables.

Considering Table 4 which presents the correlation between the independent, dependent and moderating variable, it is discovered that ATEN had a negative relationship with AUDQ with a coefficient of -0.036. It is also discovered that AINDP has a negative relationship with AUDQ with a coefficient of -0.0251. ACI was discovered to have a negative relationship on AUDQ with a coefficient of -0.0507. INSO was also seen to have a negative relationship with AUDQ with a coefficient of -0.1561. The negative coefficients may show the nature of their relationship in the regression estimates. BI was however discovered to have a positive relationship with AUDQ with coefficient 0.0964.

However, it was discovered that ATEN and BI have a positive relationship with AINDP. This was justified with coefficients of 0.1133 and 0.0266 respectively. Similarly, ACI, BI, INSO were all discovered to have a positive relationship with ATEN with coefficient 0.0468, 0.1420, 0.0749. Conversely, ACI and INSO with coefficients -0.1364 and -0.384 were negatively correlated with AINDP.

BI also has negative relationship with ACI indicated by beta coefficient -0.0260 while INSO is positively correlated with ACI with coefficient 0.0749. INSO was also discovered to have a negative relationship with BI with coefficient -0.1538.

The relationship between the variables showed that issue of multicollinearity might not exist since all the variables had low coefficients. Overall, the outcomes revealed that multicollinearity does not pose a problem to the estimation variables. The highest correlation among the independent variables was 14 percent between ATEN and BI. This may be regarded normal, as Hair et al. (2014) have argued that a correlation of less than 90 percent might not be an issue for estimation.
Table 5. Logit regression summary of the relationship between determinants of audit quality and audit quality in listed DMBs (model 1)

<table>
<thead>
<tr>
<th>Variable(s)</th>
<th>Coefficient</th>
<th>Std. err</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEN</td>
<td>-0.254</td>
<td>0.874</td>
<td>-0.29</td>
<td>0.771</td>
</tr>
<tr>
<td>AINDP</td>
<td>-0.160</td>
<td>0.069</td>
<td>-2.31</td>
<td>0.021</td>
</tr>
<tr>
<td>ACI</td>
<td>-1.858</td>
<td>2.220</td>
<td>-0.84</td>
<td>0.403</td>
</tr>
<tr>
<td>BI</td>
<td>3.604</td>
<td>1.993</td>
<td>1.81</td>
<td>0.071</td>
</tr>
<tr>
<td>INSO2</td>
<td>-0.025</td>
<td>0.012</td>
<td>-2.09</td>
<td>0.037</td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>0.077</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald X²</td>
<td>11.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob</td>
<td>0.034</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specification test: Linktest (Hatsq)</td>
<td>0.202</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gof test group (10)</td>
<td>10.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob X²</td>
<td>0.258</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of correction prediction</td>
<td>93.85</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: STATA 14.0 Output, 2021

Table 6. Logit regression of the moderating effect of INSO on the relationship between determinants of audit quality and audit quality (model 2)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. err</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEN</td>
<td>2.377</td>
<td>1.317</td>
<td>1.80</td>
<td>0.071</td>
</tr>
<tr>
<td>AINDP</td>
<td>0.444</td>
<td>0.278</td>
<td>1.59</td>
<td>0.111</td>
</tr>
<tr>
<td>ACI</td>
<td>-1.879</td>
<td>4.048</td>
<td>-0.46</td>
<td>0.643</td>
</tr>
<tr>
<td>BI</td>
<td>12.115</td>
<td>5.183</td>
<td>2.34</td>
<td>0.019</td>
</tr>
<tr>
<td>INSO2</td>
<td>0.255</td>
<td>0.113</td>
<td>2.26</td>
<td>0.024</td>
</tr>
<tr>
<td>ATENINSO2</td>
<td>-0.070</td>
<td>0.019</td>
<td>-3.78</td>
<td>0.000</td>
</tr>
<tr>
<td>AINDPINSO2</td>
<td>-0.012</td>
<td>0.006</td>
<td>-2.02</td>
<td>0.044</td>
</tr>
<tr>
<td>ACIINSO2</td>
<td>0.031</td>
<td>0.092</td>
<td>0.33</td>
<td>0.738</td>
</tr>
<tr>
<td>BIINSO2</td>
<td>-0.188</td>
<td>0.111</td>
<td>-1.70</td>
<td>0.089</td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>0.146</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald x</td>
<td>28.30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specification test: Linktest (Hatsq)</td>
<td>0.267</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gof test group (10)</td>
<td>5.59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob x</td>
<td>0.694</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of correction prediction</td>
<td>93.85</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: STATA 14.0 Output, 2021

The general effect of the independent variables on the dependent variable shows that the models are suitable and free from misspecification. Wald chi2 value of 11.8 and p-value 0.038 for the first model and Wald chi2 of 28.33 and p-value 0.001 for the second model which are significant at 1% and 5% shows that the models are well fitted with the variables of the study. The coefficients of determination which presented 7.74% for the first model and 14.55% for the second model specifies the percentage of the total deviation of the AUDQ variable that is clarified by the independent variables. This suggests that 7.74% and 14.55% of the total variation in AUDQ of listed DMBs in Nigeria is as a result of the combined effect of ATEN, AINDP, ACI, BI and INSO and correctly classified 93.85% in both models 1&2 respectively. This implies that the percentage accuracy in the classification of the models is 93.85%.

Furthermore, the Hosmer-Lameshow Goodness of Fit Test is 10.11 with a significance level of 0.26 for model 1 and 5.59 with significance level 0.69 for model 2. We can say that Hosmer and Lemeshow goodness of fit test
indicates that our model suits the data well since the significance levels are greater than 0.05 (0.26 and 0.69). In addition, the lowest hat is insignificant at 0.202 and 0.137. We therefore conclude that the models are fit for the study and there is no specification error.

Audit tenure and audit quality

Results in Model 1, Table 5 (coefficient -0.254, t-value -0.29, p-value 0.771) indicates that audit tenure (ATEN) is insignificantly affecting audit quality. The study therefore fails to reject the null hypothesis which states that audit tenure has no significant effect on audit quality of LDMBs in Nigeria. The result is in line with Tobi, Osasrere and Emmanuel (2016); Adeniyi and Miesegbe (2013); Azizkhan et al. (2018). However, this is in contrast to the findings of Oladipupo and Momye-Imina (2016), Amahalu and Beatrice (2017), Ndubisi et al. (2017), Ogbeidie et al. (2018), Blandon-Garcia and Ravenda (2019).

The finding supports agency theory which states that shorter audit tenure mitigates agency cost because 69.4% of the listed DMBs in Nigeria do not rotate the tenure of their auditors after each 3 years. Audit quality, therefore, deteriorates when the length of the audit firm client relationship is longer (Achyarsyah & Molina, 2014). The probability of providing misleading information is, therefore, lowest in the initial two years of audit firm tenure (Azizkhani et al., 2018).

Audit independence and audit quality

The results reveals that there is significant effect between audit independence (AINDP) and audit quality as indicated in Model 1, Table 5 (coefficient -0.160, t-value -2.31, p-value 0.021). It implies that for every 1 unit increase in AINDP, the natural log of audit quality will reduce by -0.160. The null hypothesis which states that audit independence has no significant effect on audit quality of LDMBs in Nigeria is therefore rejected. The result is in agreement with Zamzami et al. (2017), Haque et al. (2019) and Alhadrami et al. (2020) who found significant effect between AINDP and AUDQ. However, the outcome of the study is not in line with the results of Ndubisi et al. (2017), Pritama et al. (2017), Hardiningsih et al. (2019) and Sunday (2019) who discovered an insignificant effect between AINDP and AUDQ.

The result opposes agency theory which suggests that audit independence mitigates agency conflicts. This may be as a result of abnormal audit fees paid by the listed deposit money banks to the audit firms as indicated by the descriptive statistics in Table 4.1 above. This is because, according to Oladipupo et al. (2016) if the extent by which a particular audit fee to be charged to an audit client within a particular industry is not the same with the industry average, audit fee will have determining influence on the extent of economic bonding which exists between an auditor and his client. In a situation where the bonding exists, there may be the possibility of compromising the auditor’s
professional independence with irregular audit fee, which may be either over payment or under payment (high or low audit fee). This can cause the auditors to negotiate their independence and reduce audit quality because auditors who earn higher fees may be careful of the perceived threat to their independence and take necessary actions to safeguard their reputation.

Having a parameter estimate of -0.012, t-value -2.02, p-value 0.044, this signifies that a one unit increase in the moderating effect of INSO on AINDP will lead to -0.012 decrease in the natural log of AUDQ. This study, thus, rejects the null hypothesis which presumes that INSO has no significant influence on the link between AINDP and AUDQ. The results indicate that the interaction of institutional investors reduces the log odds of audit quality by -0.012 significantly at 5%.

The result opposes stakeholder theory which states that institutional investors help in building effective corporate governance practices in a firm because they have an undue influence on audit independence which causes the auditors to negotiate their independence and hence, reduce the likely hood of the log odds of audit quality. This implies that institutional ownership as monitoring mechanism fails to influence LDMBs to pay standard audit fees. This affects the auditors’ independence and objectivity and leads to decline in the likely hood of the log odds of audit quality. Odudu et al. (2018) opined those institutional stockholders are curious in generating more returns from their shareholdings and as such, they reduce the probability of engaging experienced auditors or big 4 audit firm.

**Audit committee independence and audit quality**

The study hypothesizes that audit committee independence has no significant effect on audit quality of LDMBs in Nigeria. The results in Table 5, Model 1 (coefficient -1.858, t-value -0.84, p-value 0.403) indicates that ACI has no significant impact on audit quality. The study therefore, fails to reject the null hypothesis stated. The outcome of this study agreed with the previous findings (Bako 2018; Omotosho et al., 2017), which established an insignificant effect of ACI on AUDQ. However, this finding disagrees with the findings of some existing studies that found statistically significant effect of ACI on AUDQ (Nikbakth & Khanbeigi 2018; Majiyebo et al., 2018; Ohaka & Imaerele, 2018; Jerubet, 2017; Chukwunedu & Okafor, 2015).

The finding opposes agency theory which proposes that audit committee independence mitigates agency cost because some of the banks violated section 153(3) of CAMA of having 6 members in the audit committee comprising 3 non-executive directors and 3 representatives of shareholders in the audit committee.

Considering the interaction effect of institutional ownership on ACI and AUDQ, the results in Model 2, table 6 reveals that INSO has no significant moderating effect on ACI and AUDQ. This is justified by coefficient value 0.031, t-value 0.33, and p-value 0.738. The study fails to reject the null hypothesis which predicts that institutional ownership has no significant moderating effect on the link between ACI and AUDQ.

The finding opposes stakeholder theory which states that corporate governance should be used to safeguard investors’ interest because some of the banks violated section 153 (3) of CAMA of having 3 non-executive directors and 3 independent directors in the audit committee. The insignificant impact of institutional investors on audit committee independence might be the result of inefficient monitoring since they do not have a fair representation in the audit committee as some banks have 100% non-executive directors as described by the descriptive statistics.

**Board independence and audit quality**

The results in Table 5, Model 1 (coefficient 3.604, t-value 1.81, and p-value 0.071) reveals that board independence has significant effect on audit quality. This signifies that for every 1% increase of independent directors in the board, the log odds of
AUDQ increases by 3.6. The study therefore rejected the null hypothesis which states that board independence has no significant effect on audit quality of LDMBs in Nigeria. The finding is in agreement with Ogoun and Perelayefa (2020), Yekini et al. (2015). However, it contradicts the findings of kaawaase et al. (2021) who found an insignificant effect between board independence and audit quality.

This finding supports agency theory which states that board independence mitigates conflicts of interest because the presence of independent directors reduces agency costs since their roles when directed towards the interest of the shareholders should foster a positive relationship with the audit quality of the banks. This indicates that independent directors strengthen board performance through monitoring and controlling the action of the management, hence contribute in audit quality.

The independent directors, therefore, are more probable to consider the interest of the shareholders which will likely improve independent decision making and in return mitigates conflicts of interest that may arise. The moderating effect of INSO on the relationship between BI and AUDQ in Model 2, Table 6 revealed a coefficient of -0.188, t-value -1.70, p-value 0.089. The result implies that a unit increase in the interaction effect of INSO on BI leads to -0.188 decrease in the natural log of audit AUDQ. This indicates a significant negative moderating effect of INSO on BI and the log odds of AUDQ at 10% significant level. This provides the justification for rejecting the null hypothesis which proposes that INSO has no significant moderating influence on the link between BI and AUDQ of LDMBs in Nigeria.

The result opposes stakeholder theory which suggests that institutional investors monitor the decisions of the board in a firm because the powers of institutional investors fail to increase the likely hood of the log odds of audit quality. This is because some of the banks violated CBN rule of having 2 independent directors on the board.

Institutional ownership and audit quality

The outcome of the study reveals that a unit increase in institutional ownership (INSO) leads to -0.025 decrease in the natural log of audit quality as shown in Model1, Table 5, (coefficient -0.025, t-value -2.09, p-value 0.037). This signifies that institutional ownership reduces the demand for big 4 auditors significantly at 5%. The null hypothesis which states that institutional ownership has no significant effect on audit quality of LDMBs in Nigeria is therefore rejected. This result is consistent with Odudu et al. (2018), Rad et al. (2016), Kouaib and Jarboui (2014) who also found negative relationship between INSO and AUDQ. The finding disagrees with the finding of Ashrafi et al. (2017), Ibn and Bala (2015) who discovered a significant positive relationship between INSO and AUDQ.

The result opposes agency theory as INSO is supposed to impact on AUDQUA. The possible explanation of this could be associated to short term institutional shareholders. This is because, Han, Kang and Rees (2013) argued that long-term institutional shareholders request greater audit quality to upgrade corporate monitoring while short term institutional shareholding is positively linked with greater level of audit threat. They found that institutions with a long-term stake in the organization have the motivation to oversee the activities of the management and thereby, requests a greater quality audit by a big 4 auditors.

5. Conclusions

From the research result, it was concluded that in the direct relationship, audit independence and institutional ownership have significant negative effect on the audit quality of LDMBs in Nigeria. This is consistent with the evidence that some banks pay less than the estimated fee as their audit fees that was expected to be paid by the individual banks. Also, the negative significant effect of institutional ownership implies that it reduces the demand for big 4 auditors. Furthermore, it was discovered that board independence has a
significant positive relationship with audit quality. This shows that independent directors contribute to audit quality through monitoring and controlling the action of the management. However, audit tenure and audit committee independence have an insignificant negative effect on audit quality which signifies that prolonged audit tenure does not contribute to audit quality of LDMBs in Nigeria. Also, the existence of negative insignificant association between audit committee independence and audit quality in the LDMBs in Nigeria is consistent with the fact that some banks do not comply with section 359 (3) of CAMA of 6 members in the audit committee comprising 3 non-executive directors and 3 representatives of shareholders.

The finding of the moderated model of the study reveals that institutional ownership has a significant negative moderating role on the relationship between audit tenure, audit independence, board independence and audit quality of listed deposit money banks in Nigeria. This implies that institutional ownership does not guarantee audit quality on prolonged audit tenure. The observed significant negative relationship between audit independence, institutional ownership and audit quality in the LDMBS in Nigeria indicates that institutional shareholders have an undue influence on the log odds of audit quality because they may be curious in generating more returns from their investments and as such, reduce the possibility of paying high audit fees to employ the services of big 4 auditors. Also, violating the CBN act of having 2 independent directors in the board as shown in the descriptive statistics resulted in ineffective monitoring even with the resources and incentives of institutional investors. Furthermore, the observed insignificant negative relationship between audit committee independence, institutional ownership and audit quality in LDMBs in Nigeria means that 38% of institutional shareholding is not sufficient enough to play a significant positive impact on the log odds of audit quality since some banks do not comply with section 359 (3) of CAMA.

The controllers of audit markets should keep a closer check through effective monitoring of the fees chargeable by the audit firm to ensure that irregular audit fees that could reduce audit independence do not arise. Consequently, audit organizations should also make sure that their staff are sufficiently compensated as this is expected to improve audit quality. To enhance the quality of audits in the banks, board independence in the LDMBs of Nigeria should be maintained and improved to ensure optimum decision-making process. The listed deposit money banks in Nigeria should ensure that they consider long-term institutional shareholding since those with a long-term stake have the motivation to monitor management and thereby, requesting a better audit quality through big 4 auditors. To curtail long auditor-client relationships that could deteriorate auditors’ independence thereby decreasing audit quality, there is the need for the relevant regulatory authorities to begin implementation of the recommended three years audit tenure. Furthermore, the institutional investors should consider the long run effect of non-payment of the standard audit fees that leads to low audit quality, the audit fee to be paid to the auditors should not be less than the industry average as observed from some of the LDMBs in Nigeria. This will promote objectivity and independence of the auditors. In addition, the management and regulatory authorities should ensure that LDMBs in Nigeria comply fully with the CBN act of 2 independent directors in the board composition. Institutional investors on the other hand, should impact positively on the policies and decisions of the board. This will facilitate and improve efficient monitoring.

References


