



## **Effects of Corporate Characteristics on Financial Performance of Listed Manufacturing Firms in Nigeria: The Moderating Role of Audit Quality**

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### **Abstract**

*Earlier studies on the relationship between organizational characteristics and business financial performance focused on the direct relationship the characteristics and the performance while overlooking the indirect relationship. Audit quality is an important that moderates the effects of the characteristics on the firm performance by checkmating financial frauds and other misappropriations. This study explores the moderating role of audit quality in the effect of the firms' corporate characteristics on financial performance of listed manufacturing firms in Nigeria. The study sources secondary data from the annual reports and accounts of six (6) manufacturing companies over the period 2008-2020. For data analysis, the study uses generalized linear model with random effects. Findings from the study signify that while the individual corporate attributes (leverage, liquidity and tangibility) are positively significant in influencing the firm performance; the interaction between leverage and audit quality is negatively significant. Again, the findings reveal that the interaction between liquidity and audit quality is positively significant. We therefore recommend that the management of the companies to intensify the application of audit quality in designing optimal liquidity that boosts the firm financial performance. The management should also apply modern audit approach to fine-tune the audit toward enhancing the efficiency of the leverage.*

**Keywords:** Cooperate government, Financial performance

**JEL Classification:** H20, H01

#### **Contribution to/Originality Knowledge:**

This papers adds to the body of knowledge by using new methodological approaches and extending the scope of the study to that captures recent events

## **1.0 Introduction**

The evaluation of a company's financial performance involves quantifying the financial impact of its plans, policies, and operations. According to Mirza and Javed (2022), a company's performance is determined by how well it uses its resources to accomplish its goals. Leverage is the debt component of a firm's capital structure that is used to finance its operations for asset purchase, working capital management, and company development within a certain accounting period. The quantity of cash or current assets that can be quickly converted to cash for a



company's daily activities is referred to as liquidity. The term "tangibility" describes the fixed assets needed by the business for ongoing operations to turn a profit and achieve improved financial performance during the accounting period.

Existing studies on corporate characteristics and financial performance of firms in Nigeria and other nations only examined the direct relationships between the study's components (Abbas, Bashir, Manzoor & Akram, 2013; Birru, 2016; Ojo, 2012; Olanrewaju & Adeyemi, 2015). Integrating audit quality as a moderating variable to analyze the indirect association between corporate qualities and the financial performance of listed manufacturing businesses in Nigeria remains a great contribution to literature.

Manufacturing companies in Nigeria must increase the degree of leverage for their capital structure to survive in the industry as they are finding it difficult to borrow funds through equity financing on the capital market since the occurrence of 2007/2009 "global financial crisis". Manufacturing companies are a crucial industry to be researched in the nation due to their considerable contribution to the Nigerian economy. As a result, the goal of this study is to investigate how audit quality moderates the effects the corporate characteristics on financial performance of listed manufacturing firms in Nigeria.

This study is motivated principally by the overall importance of auditing guaranteeing the provision of robust financial statements for both public enterprises and private companies. Audit ensures that financial statement are accurate. Reliable and complied with accounting standards and regulations; build strong confidence base for investors, creditors, and other stakeholders so that they can trust a company and its integrity. Audit detects and prevents errors or frauds in the financial books of business. It helps in decision making and pursuing business objectives; and provides an independent and objective examination of an organization's financial records and internal controls. The study is further motivated by the emergence of modern audit techniques (such as Computer Assisted Audit Technique, System Based Approach, forensic audit, etc) that drastically improve the audit quality

The review of the prior literature is the main emphasis of section 2, which comes after the introduction. The technique is covered in section 3, with particular attention paid to the research design, theoretical foundation, and model formulation. The estimation results and discussion of the findings are presented in section 4, and the conclusion and recommendations are presented in section 5.

## **2.0 Review of Empirical Studies and Theoretical Framework**

### **2.1 Leverage and Financial Performance**

The Resource-based view suggests that the availability of resources could influence the performance of firms in a competitive (Molloy & Barney, 2015). Firms with high financial leverage could be competitive advantageous. High financial leverage supports the firms to meet the following key conditions: heterogeneity, distinctiveness, imperfect mobility, substitutability, imperfect imitability and ex ante limits to competition (Gilbert, 1989; Cater, 2001). Several empirical studies were conducted to investigate the effect of financial leverage

on firm performance. In their analysis of performance of manufacturing firms in Pakistan, Shaikh et al. (2022) find that financial leverage significantly and positively affects the firm performance. Similarly, Nguyen and Nguyen (2020) and Markonah, Salim & Franciska (2020) have found that the leverage positively influences the performance of manufacturing firms in Vietnam and Indonesia respectively.

Getahun (2016) examined the impact of capital structure on the financial performance of insurance companies in Ethiopia using a sample size of 9 insurance companies out of a population of 17 firms for the period under study. The findings show a substantial inverse link between leverage and corporate financial performance. Mule and Mukras (2015) utilize a sample size of 47 enterprises to examine the association between financial leverage and the financial performance of listed firms in Kenya from 2010 to 2015. The study's findings show a significant and negative relationship between leverage and the businesses' financial performance.

Similarly, Abbas, Bashir, Manzoor, and Akram (2013) examined the determinants of the financial performance of listed firms in Pakistan from 2005 to 2010 using a sample size of 139 firms out of the population of 164 firms. The results show evidence of insignificant negative relationship between leverage and the financial performance of the selected firms. Using a sample size of 40 organizations from 2009 to 2013, Birundu (2014) investigated the impact of capital structure on the financial performance of small and medium-sized businesses in Kenya. The study discovered a weak negative relation between leverage and the financial performance of the companies.

Using a sample size of 8 companies from 2004 to 2014, Bhattarai (2016) investigated the effect of capital structure on the financial performance of manufacturing enterprises in Nepal. The study's findings show that there is a significant negative connection between leverage and the firms' financial success. Using listed manufacturing businesses from the Indonesian Stock Exchange from 2008 to 2010, Sudiyatno, Elen, and Kartika (2012) analysed company policy, firm performance, and firm value and discovered a strong negative impact of leverage on firm financial performance. Their conclusions concur with those of Salehi (2009) that investigated the relationship between leverage and the financial performance of a sample of Iranian enterprises.

As mentioned before, Rayan (2008) provided evidence that financial leverage significantly harms a company's financial performance. Companies with minimal financial leverage typically outperform those with high financial leverage (Tan, 2009). Yoon and Jang (2005) investigated the impact of financial leverage on the risk and profitability of restaurant businesses between 1998 and 2003. They discovered that businesses that financed their operations with equity outperformed businesses that financed their operations with leverage. Using a sample of 98 companies from 2001 to 2010, Damouri, Khanagha, and Kaffash (2013) investigated the link between changes in financial leverage and the valuations of the listed companies on the Tehran Stock Exchange.



According to some findings, there is no meaningful connection between variations in financial leverage and the financial success of the chosen enterprises. Fosu (2013) showed that financial leverage had a positive and substantial impact on a business's performance after researching the link between capital structure and firm performance using panel data made up of 257 South African enterprises from 1998 to 2009. Low levels of leverage can improve productivity, efficiency, and business performance. On the other hand, large levels of leverage can result in decreased profit margins and firm performance (Skopljak & Luo, 2012).

Hsu (2013) found that leverage had a detrimental impact on the performance of 336 Taiwanese IT enterprises. Onimisi (2010) looked at how capital structure affected the performance of listed manufacturing companies in Nigeria and discovered a positive correlation between leverage and financial performance. The impact of financial leverage on Indian market capitalization and shareholder profits was also studied by Pachori and Totala (2012). They discovered that market capitalization and returns to shareholders are not significantly in affecting financial leverage. Rahman (2013) looked at the connection between financial leverage and the success of Pakistani sugar companies that were publicly traded, and the study discovered a strong positive connection between the two.

Among Pakistanis listed petroleum and energy firms, Akhtar, Javed, Maryam, and Sadia (2012) found a strong and positive relationship between leverage and financial performance. Ojo (2012) investigated the impact of financial leverage on the corporate performance of a few chosen firms in Nigeria and found a strong correlation between the two. However, utilizing a sample of 1000 Philippine enterprises for a full year (2009), Magpayo (2011) performed research on the link between leverage and financial performance and discovered a strong negative correlation between the two.

It is clear from the reviewed studies that financial leverage significantly improves the firm performance across different countries. The studies utilize different estimation techniques to analyse the data. Thus, the studies prove the validity of resource-based view that financial leverage improves the resources of the firms to more competitively advantageous.

## **2.2 Liquidity and Financial Performance**

Trade-off theory posits that liquidity and profitability as dual economic terms that mutually exclusive as the existence of high liquidity drives away profitability and vice versa (Garcia & Martinez, 2007). Nonetheless, Orshi (2016) argues that there could be optimal level at which both liquidity and profitability can be targeted, because the two have an unwavering linkage. Li et al. (2020), using random effects generalized least squares (GLS) regression, observe that liquidity has significant adverse effect on the firms' Return on Equity (ROE) but had insignificantly positive effect on ROE when surrogated by the cash flow ratio. Onsongo et al. (2020) establish that liquidity risk had a significantly negative effect on ROE in Ghana. In contrast, Jihadi et al. (2021) observe that liquidity significantly raises the profitability of Indonesian firms.

Using secondary data, Museiga, Olweny, Mukanzi, and Mutua (2017) investigated the impact of liquidity risk on the financial performance of Kenyan commercial banks between 2006 and 2015. The study draws a sample of 30 banks out of 44 Kenyan commercial banks. The data were analysed using multiple regressions, and the findings show a strong positive correlation between the businesses' financial performance and liquidity. Olarewaju and Adeyemi (2015) used a sample size of 15 banks to study the impact of liquidity on the financial performance of listed deposit money banks in Nigeria from 2004 to 2013. Multiple regressions were used to examine secondary data that was gathered for the study, and the results demonstrate a weakly positive correlation between bank liquidity and financial performance. Liquidity and financial performance have a considerable positive link, according to Pourali and Arasteh's (2013) study of the relationship between liquidity, corporate governance, and business value.

Additionally, Nireesh (2012) looked at the trade-off between the profitability and liquidity of 31 listed companies in Sri Lanka from 2007 to 2011. The outcome shows a strong positive correlation between the businesses' profitability and liquidity. Using a sample of 154 businesses registered on the Tehran Stock Exchange, Dalvi and Baghi (2014) investigated the link between company performance and stock market liquidity. They discovered a high positive correlation between liquidity and the financial performance of the firm.

Using a sample of 12 manufacturing businesses, Owolabi and Obida (2012) investigated the effect of liquidity management on the financial performance of listed manufacturing firms in Nigeria from 2005 to 2009. The outcome demonstrated that liquidity has a considerable favorable influence on the businesses' financial performance.

From the empirical review, there are conflicting findings on the effect of liquidity on financial performance of firms. Majority of the findings confirm the existence of equilibrium between liquidity and profitability among the firms.

### **2.3 Tangibility and Financial Performance**

In the International Accounting Standards Board (IASB) (2018), assets remain economic resources under the custody of entities with the potential to generate additional economic, financial and monetary benefits. Pecking order theory, expounded by Donaldson (1961) and Myers (1984), suggests that firms adhere by a financing hierarchy whereby the firms seek to minimize costs due to information asymmetry, and start with internal resources and continues with external resources. Related to external financing, debt issuance is favoured compared to equity issuance due to the lower information cost of debt and adverse selection effect of equity issuance (Demirgünes, 2016). Thus, the pecking order theory considers the effect of tangible assets on capital structure over debt issuance, as these assets can be used as collateral for debt financing.

Nazir et al. (2021) examined the impact of asset tangibility and other factors on financial performance firms listed on the Pakistan Stock Exchange over the period 2013-2017 using pooled, fixed and random effect regression techniques. Their findings show that the tangibility positively and significantly impacts return on assets and profit margins. On the contrary, Musah



et al. (2019) have found that the tangibility significantly and negatively correlates with financial performance of the firms listed on Ghana Stock Exchange over the period 2008-2017. Likewise, Vuković et al. (2022) establish a significant and negative connection between asset tangibility and financial performance of some European agricultural companies over the period 2013-2019.

Birru (2016) used a sample size of 9 banks, which was determined using a purposive sampling approach, to study the impact of capital structure on the financial performance of commercial banks in Ethiopia from 2011 to 2015. The secondary data gathered for the study were analyzed using multiple regression, and the findings provide evidence of a substantial inverse relationship between tangibility and bank financial performance. The study's findings indicate a negligible positive correlation between tangibility and the businesses' financial performance. Pouraghajan, Malekian, Milad, Vida, and Bagheri (2012) used a sample size of 400 companies to examine how capital structure affected the financial performance of listed companies on the Tehran Stock Exchange from 2006 to 2010. The secondary data gathered for the study were analyzed statistically using multiple regressions, and it was discovered that there was a substantial positive association between the businesses' financial success and tangibility.

Additionally, Mwangi and Birundu (2015) used multiple regressions to examine the impact of capital structure on the financial performance of 40 small and medium-sized businesses in Kenya from 2009 to 2013 analyzing the secondary data gathered using multiple regressions. The investigation's findings indicate a negligible positive correlation between tangibility and the businesses' financial performance. In their study from 2011 to 2015, Bongoye, Banafa, and Kingi (2016) looked at how firm-specific characteristics affected the financial performance of nonfinancial businesses listed on the Nairobi Securities Exchange. The population and sample size for the study were 37 businesses, and multiple regressions were employed to analyze the secondary data that was gathered for the study. The findings showed a weak negative association between tangibility and the businesses' financial performance.

It is obvious from the literature reviewed that asset tangibility could positively or negatively affect financial performance of firms depending on the efficiency with which the tangibility is used in debt financing. The divergent findings might be the results of different institutions across countries and approaches.

Overall, there is seemingly lack of uniformity among the findings on the effect of corporate characteristics on financial performance of firms across industries and countries. We observe that most (if not all) of the studies have failed to account of moderating effect of audit quality, and this is a micro-institutional factor that strengthens the effectiveness of the characteristics in enhancing the firms' performance. This study seeks to contribute to the body of knowledge by accounting for the moderating role of audit quality.

### 3.0 Methodology

#### 3.1 Model Specification and Theoretical Framework

The signalling theory of Spence serves as the foundation for research on the link between corporate features and organizational effectiveness (1973). The theory gives two participants in a transaction the chance to speak about the transaction's dependability. In terms of decision-making, the theory is concerned with the dependability of a certain signal. The signalling theory takes into account the accuracy and dependability of financial information given by businesses to their customers who use it to make investment decisions. According to Spence (1973), a successful corporation sets itself apart from underperforming ones by communicating well with capital markets and potential investors about its performance. Investors would be informed about the company's future financial performance through signals transmitted through its financial statement.

Additionally, the signalling hypothesis presupposed that the manager of an organization had greater access to its financial data than shareholders. In this study, signalling theory is used to support corporate characteristics represented by leverage, liquidity, and tangibility as well as financial performance represented by return on assets.

#### 3.2 Model Specification

We anticipate a functional link between corporate qualities and financial performance of the following kind, considering the theoretical description and evaluation of existing literature:

$$ROE_{it} = (LEV_{it}, LQT_{it}, TGY_{it}) \quad (1)$$

The functional form of equation (1) is transformed into an econometric model as in equation (2):

$$ROE_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 LQT_{it} + \beta_3 TGY_{it} + \varepsilon_{it} \quad (2)$$

Incorporating the moderating effect of Audit Quality into equation 2, we derive equation (3):

$$ROE_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 LQT_{it} + \beta_3 TGY_{it} + \beta_4 (LEV_{it} * AQY_{it}) + \beta_5 (LQT_{it} * AQY_{it}) + \beta_6 (TGY_{it} * AQY_{it}) + \varepsilon_{it} \quad (3)$$

Where: LEV is leverage, LQT is liquidity, TGY is tangibility, and ROA is the return on assets, a proxy for financial performance. Leverage and audit quality are interacted using LEV\*AQY, liquidity and audit quality are interacted using LQT\*AQY, and tangibility and audit quality are interacted using TGY\*AQY.

#### 3.3 Operationalization of Variables

$i$  is the total number of businesses,  $t$  is the investigation's time frame, and  $\beta_1$  to  $\beta_7$  are the parameters of the independent variables to be estimated.



Based on theory and existing literature, it is assumed that the parameter  $\beta_1$  to  $\beta_7$  are greater than zero. Because the study aims to quantify the connection between corporate characteristics and the financial performance of listed manufacturing enterprises in Nigeria, the correlation research design is used for the period 2008-2020. All of the manufacturing companies that are registered on the Nigeria Stock Exchange make up the study's population. Table 1 presents definitions and measurements of the variables.

**Table 1:** Definitions and Measurements of Independent Variables

Acronym	Definition	Measurement
<b>Dependent Variable</b>		
<b>ROA</b>	Return on Assets	It is a profitability ratio that provides how much profit a company can generate from its assets (Claire Boyte white 2022) Formula is Calculated as: $Assets = Net\ Income / Total\ Assets$
<b>Independent Variables</b>		
<b>LEV</b>	Leverage	It is Measured as the ratio of long-term debt to the firm's total assets and is an investment where borrowed money or debt is used to maximize the returns of an investment, acquire additional assets or raise funds for the company. (Financial Times 2023 & Fosu, 2013).
<b>TGY</b>	Tangibility	Measured as fixed assets divided by the firm's total assets (Birru, 2016)
<b>LQT</b>	Liquidity	Measured as current assets divided by the firm's current liabilities (Nireesh, 2012).
<b>AQY</b>	<b>Moderator</b> Audit Quality	Measured as natural logarithms of audit fees paid by the firms (Dalvi & Baghi, 2014).

Given that data for six businesses is available, the study utilized the data on all of the firms as its sample size. Secondary data for the study come from the annual reports and balance sheets of the six listed manufacturing companies in Nigeria throughout the study period.

### 3.4 Estimation Technique

For the panel data analysis, generalized linear model (GLM) with random effect regression is used to determine the link between the study's variables. Since multiple regression not only aids in identifying a link between the dependent and independent variables. Given the fixed effects model has severe bias when the mixed effects variance is positive and the number of clusters is large, GLM with random effect regression was introduced an extension to contain random effects in addition to the usual fixed effects (Breslow & Clayton, 1993).



#### 4.0 Results of the Estimation and Discussion of Findings

To determine if there exists or not an econometric problem of heteroskedasticity, the study performs a test for that. A heteroskedasticity test was conducting using *hettest* after the model estimations, and the test result indicates that the study's data have an issue with heteroskedasticity (see Table 2).

#### 4.1 Findings from Regression

Table 2 reveals that random effect regression models are more efficient than fixed effect models as indicated by Hausman test results, which are statistically significant. The test result demonstrates that the random effect model is preferred. To ensure the robustness of the results, we have estimated generalized linear models with random effects. The first model in Table 2 suggests that all the explanatory variables are statistically significant at 5 percent with positive sign. For instance, leverage significantly enhances the return on asset (ROA) or financial performance of the listed manufacturing firms by 0.163. This means leverage provides the firms with adequate resources to be more competitively advantageous than rivals as proposed by Market Based View (MBV). This is in line with findings of Mule and Mukras (2015); Nguyen and Nguyen (2020) and Shaikh et al. (2022) but differs from that of Getahun (2016).

**Table 2:** Results of Generalized Linear Models with Random-Effect Estimations

Model 1			Model 2	
Variables	Coefficient	P-Values	Coefficient	P-Values
Constant	-0.264	0.021	-0.152	0.078
LEV	0.163	0.037	0.632	0.048
LQT	0.112	0.044	-0.214	0.743
TGY	0.063	0.032	-0.167	0.589
AQY			-0.061	0.981
LEV*AQY			-0.230	0.065
LQT*AQY			0.214	0.045
TGY*AQY			0.091	0.875
R <sup>2</sup>	0.245		0.356	
Wald Chi <sup>2</sup>	3.52	0.007	5.92	0.035
Hettest	20.13	0.002	32.52	0.000
Hausman	71.21	0.000	23.34	0.095
Observation	78	78	78	78

The results also signify that as financial liquidity increases by a unit, then the financial performance goes up by 0.112. The finding aligns with Orshi's (2016) claim that there is an optimal point at which financial liquidity and profitability coexist. This is also consistent with the findings of Museiga et al. (2017), Dalvi and Baghi (2014) but it contradicts the finding by Nireesh (2012). Again, the increase in tangibility of the assets leads to 0.063 rise in the financial performance among the firms. The outcome disagrees with Birru (2016) but is consistent with Pouraghajan et al (2012) and Nazir et al. (2021). The outcome also reveals a negligible negative



correlation between the financial performance of Nigerian-listed manufacturing enterprises and audit quality as a moderating variable.

Model 2 in Table 2 provides the results for the moderating role of audit quality in the effects of corporate attributes on financial performance among the firms. All the interaction terms but the interaction between tangibility and audit quality are statistically significant at least 10 percent. The interaction between leverage and audit quality is negatively significant at 10 percent, which implies that as the leverage and audit quality increase at once, the financial performance of firms reduces by 0.23. This means the auditors recommend minimal utilization of the leverage so as to minimize the problem of fraud and misallocation of the resources. This agrees with finding by Abdullahi et al. (2020). However, the interaction between liquidity and audit quality is positively significant at 5 percent suggesting that audit quality improves the efficiency of financial liquidity by fine-tuning it into profit-enhancing course. Moreover, the interaction between tangibility and audit quality is positively insignificant.

Finally, the models show that the variables therein are jointly significantly in influencing the performance of the firms as reflected by the strong significance Wald  $\chi^2$  statistics.  $R^2$  statistics reveal that the explanatory variables in models 1 and 2 capture about 26 and 36 percent of variations in the dependent variable respectively. This means the models suffer from omitted variables bias.

## 5.0 Conclusion and Recommendations

It is clear that audit is important in improving the accuracy and reliability of financial statements of companies as well as raising the integrity and trustworthiness of the entities. The emergency of modern audit approaches motivates this study as previous ones overlook the moderating role of audit quality in the effects of corporate attributes on the firm financial performance. This utilizes generalized linear model with random effects to analyze the moderating role of audit quality based on 2008-2020 for manufacturing companies in Nigeria.

Findings from the study signify that while the individual corporate attributes (leverage, liquidity and tangibility) are positively significant in influencing the firm performance; the interaction between leverage and audit quality is negatively significant. Again, the findings reveal that the interaction between liquidity and audit quality is positively significant. We therefore recommend that the management of the companies to intensify the application of audit quality in designing optimal liquidity that boosts the firm financial performance. The management should also apply modern audit approach to fine-tune the audit toward enhancing the efficiency of the leverage.

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