

**FIRM TRAITS AND SHAREHOLDER INVESTMENT DECISION:
EVIDENCE FROM LISTED NATURAL RESOURCES FIRMS IN
NIGERIA*****¹Orjinta, Hope Ifeoma (Phd), ²Okpalaukeje, R. U. C.****³Ijeoma Scholastica Omemgbeoji**

¹Department of Accountancy, Chukwuemeka Odumegwu Ojukwu University, Igbariam,
Anambra State, Nigeria.

²Department of Accountancy, Chukwuemeka Odumegwu Ojukwu University, Igbariam,
Anambra State, Nigeria.

³Department of Accountancy, Chukwuemeka Odumegwu Ojukwu University, Igbariam,
Anambra State, Nigeria.

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***Corresponding Author: Orjinta, Hope Ifeoma (Phd)**

Department of Accountancy, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State,
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ABSTRACT

The study examined the effect of firm traits on shareholder investment decisions in listed natural resources firms in Nigeria. Specifically, the study assessed the effects of firm size, firm leverage, and firm liquidity on shareholder invested capital. An ex-post facto research design was employed, with a census of all four natural resources firms listed on the Nigerian Exchange Group forming the study population and sample. Secondary data were collected from annual reports and audited financial statements of the selected firms between 2015 and 2024. Hypotheses were tested using panel regression analysis, with the Hausman specification test confirming the Fixed Effect Model as the appropriate estimator. The findings revealed that: firm size has a positive and significant effect on shareholder invested capital among listed natural resources firms in Nigeria at 5% significance level ($\beta = 0.914281$, $p = 0.0000$); firm leverage has a negative and significant effect on shareholder invested capital among listed natural resources firms in Nigeria at 5% significance level ($\beta = -0.699958$, $p = 0.0000$); firm liquidity has a positive but nonsignificant effect on shareholder invested capital among listed natural resources firms in Nigeria at 5% significance level ($\beta =$

0.010895, $p = 0.8429$). In conclusion, shareholder investment is more responsive to the durability and risk structure of firms than to their immediate working capital positions, which may reflect the capital-intensive nature of natural resources operations and the sensitivity of investors to stability in the face of global price fluctuations and domestic financial constraints. The study recommended that the management of listed natural resources firms in Nigeria should strategically pursue growth through asset expansion and consolidation of operations by reinvesting profits into productive assets, engaging in carefully selected mergers or acquisitions, and adopting policies that enhance long-term capacity.

KEYWORDS: Firm Traits, Shareholder Investment Decisions, Firm Size, Firm Leverage.

1.0 INTRODUCTION

The Nigerian economy has long relied on the natural resources sector as a source of industrial growth, employment, and foreign exchange earnings (Chigbo et al., 2021). Firms in this sector, particularly those engaged in mining, processing, and extraction, have played an important role in driving development while also facing unique challenges. The sector is capital-intensive, highly sensitive to global commodity prices, and frequently exposed to regulatory and environmental issues. This makes natural resources firms distinct from other sectors such as manufacturing, consumer goods, or banking. Over the past decade, the Nigerian Exchange Group (NGX) has provided a platform for these firms to raise capital from investors, yet they often struggle to attract and retain long-term shareholders compared to more established industries. In a business climate characterized by fluctuating exchange rates, unstable oil prices, and rising production costs, investment decisions by shareholders are increasingly influenced by the characteristics of the firms themselves (Ojeaga & Aigienohuwa, 2024). Understanding the relationship between firm-specific traits and shareholder investment behavior is therefore an important step in explaining how these firms can remain competitive and attractive to investors despite the structural challenges that surround them.

Shareholder investment decisions have become central to business sustainability and growth in today's competitive global environment. Investors are constantly seeking signals that help them allocate resources efficiently, particularly in economies like Nigeria where the business environment is often volatile and uncertain (Olayinka, 2022). Shareholders want to ensure that their invested capital yields optimal returns, and this depends not only on external market forces but also on firm-level characteristics that reveal the stability, efficiency, and growth

potential of a company (Ojeaga & Aigienohuwa, 2024). Firm traits such as size, leverage, and liquidity play important roles in shaping how investors perceive risk and return (Orjinta et al., 2025a). Larger firms are often viewed as more stable and capable of weathering economic shocks, while smaller firms may be seen as riskier but potentially more flexible and innovative (Deshi et al., 2025). Leverage, on the other hand, raises questions about a firm's financial structure and its ability to manage debt without jeopardizing returns (Olaniyan et al., 2020). Liquidity reflects the firm's ability to meet short-term obligations and sustain operations without difficulty (Dang et al., 2025). For shareholders in Nigeria, where inflation, exchange rate volatility, and regulatory challenges are common, these firm-level traits are even more relevant in guiding investment decisions. Therefore, studying the link between firm traits and shareholder invested capital is not only relevant but also timely in strengthening the connection between financial performance, investor confidence, and long-term business growth.

The effect of firm traits on shareholder investment decisions has attracted considerable attention because these characteristics often determine how much confidence investors place in a company. Firm size is associated with economies of scale, diversification of operations, and the ability to secure favorable financing (Frances & Nworie, 2025), all of which can reassure shareholders that their capital is safe. Larger firms also tend to enjoy better access to credit markets and greater bargaining power in supply chains, which may further enhance shareholder confidence. Leverage, however, presents a double-edged sword (Ikwuo et al., 2025). While moderate levels of debt can magnify returns and demonstrate financial prudence, excessive leverage may increase financial risk, particularly in industries such as natural resources where revenues are uncertain due to price volatility in global markets. Liquidity is another critical trait, as investors are wary of firms that struggle to meet short-term obligations, which may signal operational inefficiency or poor financial management (Salawu & Olayinka, 2016). For listed natural resources firms in Nigeria, these traits are especially significant given the sector's exposure to external shocks, high capital requirements, and fluctuating global demand. Shareholders evaluate these characteristics before committing their funds, as they reflect both the immediate and long-term sustainability of firms.

Firms with strong financial structures, efficient use of resources, and transparent reporting are able to attract and retain investors with ease. Shareholders rely on indicators such as firm

size, leverage, and liquidity to evaluate whether a company is capable of generating sustainable returns on invested capital (Salawu & Olayinka, 2016). In this context, firms that demonstrate stability, prudent financial management, and the capacity to meet obligations are better positioned to inspire investor confidence, encourage long-term commitments, and sustain growth in competitive environments. In Nigeria, however, natural resources firms appear to face persistent challenges that weaken their attractiveness to shareholders. Many of these firms are relatively small in scale compared to companies in other sectors, making it difficult to compete for investor attention. High leverage ratios are common, often reflecting a dependence on debt to finance operations in a sector that is capital intensive and vulnerable to global price swings. Liquidity constraints further limit the ability of these firms to meet short-term obligations, sometimes raising doubts about their financial health.

The result of these challenges is that shareholders may hesitate to commit their capital to natural resources firms or may withdraw investments when risks appear too high. This reduces the ability of the sector to mobilize funds for expansion and modernization, thereby weakening its contribution to Nigeria's industrial development and foreign exchange earnings. It also creates uncertainty in the market, as investors seek safer opportunities in other industries while leaving the natural resources sector underfunded. Over time, this can lead to reduced competitiveness, job losses, and missed opportunities for national economic growth. Prior studies have examined the relationship between firm attributes, financial characteristics, and shareholder investment decisions in Nigeria across different sectors, but little attention has been given to natural resources firms. Dang et al. (2025) studied shareholders' wealth in manufacturing firms, while Deshi et al. (2025) focused on consumer goods companies. In banking, Ojeaga and Aigienohuwa (2024), Nworie et al. (2024), and Umoh (2024) emphasized leverage, dividends, and financial statements. Edori and Egileoniso (2024) analyzed financial performance, and Akinadew et al. (2023) focused on SMEs. Other works include Nworie and Mba (2022), Olaniyan et al. (2020), Shodiya et al. (2019), and Salawu and Olayinka (2016). However, none addressed listed natural resources firms, creating a gap this study fills by examining firm size, leverage, and liquidity from 2015–2024.

1.1 Objective of the study

The main aim of the study is to examine the effect of firm traits on shareholder investment decisions in listed natural resources firms in Nigeria. The specific objectives are as follows:

1. To determine the effect of firm size on shareholder invested capital in listed natural resources firms in Nigeria.
2. To assess the effect of firm leverage on shareholder invested capital in listed natural resources firms in Nigeria.
3. To evaluate the effect of firm liquidity on shareholder invested capital in listed natural resources firms in Nigeria.

1.2 Research Questions

1. What is the effect of firm size on shareholder invested capital in listed natural resources firms in Nigeria?
2. How does firm leverage affect shareholder invested capital in listed natural resources firms in Nigeria?
3. What is the effect of firm liquidity on shareholder invested capital in listed natural resources firms in Nigeria?

1.3 Research Hypotheses

H01: Firm size has no significant effect on shareholder invested capital in listed natural resources firms in Nigeria.

H02: Firm leverage has no significant effect on shareholder invested capital in listed natural resources firms in Nigeria.

H03: Firm liquidity has no significant effect on shareholder invested capital in listed natural resources firms in Nigeria.

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Firm Traits

Firm traits refer to the distinguishing attributes or features that characterize a business organization (Nworie et al., 2022; Orjinta et al., 2025b). They are the inherent qualities or measurable attributes that describe the structure, operations, and financial posture of a company. These traits provide a way of identifying one firm as distinct from another in terms of performance, financial capacity, and organizational structure. In academic and professional discussions, firm traits are often described as the observable and quantifiable features of a company that influence how it operates and competes (Deshi et al., 2025). They are not simply external labels but rather the financial and organizational features that shape how a

company is perceived in the market and by investors. Such traits form the basis for evaluating a firm's stability, competitiveness, and growth potential (Okwuego & Orjinta, 2023).

Firm traits are the measurable characteristics of a company that guide both internal decision-making and external stakeholder evaluation (Ukoh et al., 2024). Investors, regulators, and analysts often rely on these attributes to make judgments about performance, sustainability, and reliability. By focusing on these features, one can understand not just what a firm produces but how it is positioned financially and structurally. In essence, firm traits are the descriptive features that form the foundation for comparative analysis among firms (Falana et al., 2025). They help in determining how different firms behave under certain market conditions and how they appeal to shareholders. The study of firm traits is therefore a way of understanding the individuality of a business and its capacity to attract and sustain investment.

2.1.2 Firm Size

Firm size refers to the scale or magnitude of a business, measured in terms of financial and operational capacity (Deshi et al., 2025). It is the level to which a company has grown in terms of resources, production, and presence in the market. Firm size is an indicator that expresses how small, medium, or large a company is relative to others within an industry or across industries (Salawu & Olayinka, 2016). From a financial perspective, firm size is often seen as a reflection of the resources a company can command. Larger firms usually have more capital, employees, assets, and operational coverage than smaller firms. In defining firm size, therefore, emphasis is placed on the overall scope and weight of the business within its sector and in the broader economy (Nworie et al., 2022).

Firm size can also be described as the structural scale of a company's activities. It represents how much the company has expanded, not only in terms of financial resources but also in market reach and organizational structure. This understanding allows firm size to be associated with stability, bargaining power, and market dominance. At its broadest level, firm size represents the magnitude of a company's existence in the economic landscape (Deshi et al., 2025). Whether expressed in financial numbers, market share, or workforce strength, it defines the stature of a business and serves as a distinguishing characteristic when firms are compared with each other.

2.1.3 Firm Leverage

Firm leverage refers to the extent to which a company relies on borrowed funds to finance its operations and growth (Deshi et al., 2025). It is the use of debt as a financial strategy to expand activities and pursue opportunities beyond what equity alone can provide. The term reflects the proportion of debt relative to equity in a company's capital structure. In a general sense, firm leverage captures the degree of financial dependence a company has on external funding sources (Ojeaga & Aigienohuwa, 2024). When a firm is highly leveraged, it means a significant part of its operations is supported by debt, whereas a low level of leverage shows that the company relies more on its equity.

Firm leverage can also be defined as a measure of the balance between risk and return in a company's financing strategy (Nworie & Mba, 2022). Debt introduces obligations such as interest payments, but it can also increase the potential returns for shareholders if the borrowed funds are used efficiently. As such, firm leverage represents the weight of financial obligations in the structure of a company. In simple terms, firm leverage defines the relationship between a company's own resources and the funds it borrows from creditors (Olaniyan et al., 2020). It highlights how much of the firm's growth and operations depend on debt financing, making it an important attribute for investors, creditors, and managers who wish to understand the financial posture of the business.

2.1.4 Firm Liquidity

Firm liquidity refers to the ability of a company to convert its resources into cash quickly and efficiently in order to meet short-term obligations (Dang et al., 2025). It reflects the ease with which a business can settle its debts as they come due without disrupting ongoing operations. In defining liquidity, the focus is on the firm's capacity to balance immediate financial commitments with available resources. Liquidity shows the financial flexibility of a firm to respond to urgent needs and opportunities. A liquid company is one that can cover expenses and obligations without resorting to extreme measures such as selling long-term assets at unfavorable prices (Deshi et al., 2025). It is therefore a fundamental quality that determines the smooth functioning of a business in the short term.

Liquidity measures how well a company's current assets can be mobilized into cash within a reasonable time frame. This definition highlights the role of liquidity in bridging the gap between obligations and available financial resources. It captures the immediate readiness of a company to remain stable in day-to-day operations. Firm liquidity is ultimately the

reflection of a company's short-term financial health (Salawu & Olayinka, 2016). A firm with sufficient liquidity demonstrates the ability to withstand unexpected demands, maintain confidence among creditors, and provide reassurance to investors. Thus, liquidity defines not just the possession of assets, but the readiness and ease with which they can be used to sustain the company's ongoing financial commitments.

2.1.5 Shareholder Investment Decision

A shareholder investment decision refers to the judgment or choice made by an investor regarding whether to commit, increase, reduce, or withdraw financial resources in a company (Ojeaga & Aigienohuwa, 2024). It reflects the process through which shareholders evaluate the prospects of a firm and decide how their capital should be allocated. Shareholder investment decision indicates the level of financial participation in a business. This decision can also be described as the outcome of an investor's evaluation of a firm's performance, stability, and growth potential. It is not merely about choosing whether to invest but also about the size and continuity of the investment. The decision captures the deliberate act of committing resources with the expectation of future benefits (Nworie et al., 2024).

Furthermore, a shareholder investment decision is the practical expression of confidence in a company's financial structure and strategy. Shareholders rely on available information to determine whether their involvement will generate returns that justify the risks involved (Olayinka, 2022). The decision is therefore the formal act of aligning personal or institutional funds with the opportunities presented by a business. In sum, shareholder investment decision is the conscious determination of where and how shareholders place their financial resources within a firm (Ojeaga & Aigienohuwa, 2024). It encapsulates the balance between expectations of returns and tolerance for risk, serving as the central act that links investor behavior with firm performance.

2.1.6 Shareholder Invested Capital

Shareholder invested capital refers to the total financial resources contributed by shareholders into a company, either through the purchase of shares or through retained earnings that are reinvested into the business (Borisovna, 2020). It represents the amount of money shareholders commit to the firm in exchange for ownership and future returns. Shareholder invested capital is the aggregate funds that shareholders place in a company, which become the foundation for its operations and growth. It is not limited to the initial share purchases but

also includes reinvested profits that shareholders agree to leave within the business rather than withdraw (Borisovna, I2020).

Shareholder invested capital refers to the measure of ownership commitment that underpins the financial stability of a firm. It shows how much of the company's resources originate from those who hold equity and expect returns through dividends or capital gains (Shah et al., 2021). The term captures both the financial input and the enduring stake that shareholders maintain in a company. In essence, shareholder invested capital is the sum of resources that reflects the ownership backbone of a business. It symbolizes the trust shareholders place in management to utilize their funds responsibly while also forming the basis for the firm's capacity to generate returns. This capital is central to the relationship between firms and shareholders because it defines the depth of financial involvement and the strength of the company's ownership structure.

2.2 Theoretical Framework

The study is anchored on Signaling theory which was first introduced by Michael Spence in 1973 in the field of labor economics, where he used it to explain how job seekers signal their productivity and ability to employers through educational attainment (Nworie et al., 2024). Over time, the theory expanded beyond labor markets and has become a key framework in finance and corporate studies. In financial research, it is used to explain how firms communicate private information to external stakeholders through observable financial and operational actions (Ahmed, 2023). Since managers often have more information about the true state of a firm than shareholders, signaling theory helps to bridge this information gap by interpreting decisions such as dividend payouts, capital structure, and liquidity management as signals about the firm's strength and prospects.

The central postulation of signaling theory is that managers use certain financial decisions or attributes as signals to convey information that would otherwise remain hidden from external parties (Yimenu & Surur, 2019). For example, higher dividend payouts may signal stronger profitability and liquidity, while increased leverage may indicate management's confidence in the firm's ability to meet long-term obligations. Similarly, firm size can act as a signal of market dominance and stability, providing reassurance to current and potential shareholders (Frances & Nworie, 2025). The key idea is that not all firms can mimic strong signals consistently, so the signals must be costly enough to separate well-performing firms from

weaker ones. By interpreting these signals, shareholders are able to make more informed investment decisions.

This theory is particularly relevant to the present study because it provides a useful lens for understanding how firm traits such as size, leverage, and liquidity influence shareholder investment decisions in listed natural resources firms in Nigeria. These traits act as signals that shareholders rely on when deciding whether to invest, increase their holdings, or withdraw from the market. Since natural resources firms are exposed to high capital demands and external shocks from global commodity prices, the ability of these firms to send credible signals through financial attributes becomes even more critical. By applying signaling theory, the study explains how shareholders interpret firm characteristics as indicators of stability, profitability, and long-term sustainability, ultimately shaping their investment behavior.

2.3 Empirical Review

Dang et al. (2025) explored the determinants of shareholders' wealth in Nigerian listed manufacturing companies, concentrating on profitability, liquidity, capital structure, and corporate governance. Using a quantitative design with an ex post facto approach, the study assessed financial performance and governance practices of firms listed on the Nigerian Exchange Group between 2012 and 2022. From a population of 25 consumer goods companies, purposive sampling was applied to ensure data completeness and reliability. The findings showed that profitability and liquidity had no significant impact on shareholders' wealth. In contrast, capital structure and governance practices were critical drivers. High debt levels were linked to reduced shareholder wealth, underscoring the importance of balanced financial leverage. Strong governance practices were associated with improved shareholder wealth, highlighting the need for transparent frameworks to boost performance and investor trust. Based on these hints, the study recommended optimizing capital structure, strengthening governance systems, enhancing profitability, and monitoring liquidity to sustain shareholder wealth in Nigerian manufacturing firms.

Deshi et al. (2025) assessed how firm financial characteristics influence the value of consumer goods companies in Nigeria. The study adopted a quantitative approach with regression analysis, focusing on profitability, leverage, and liquidity as predictors of firm value. Data were drawn from the Nigerian Stock Exchange between 2013 and 2023, covering 16 purposively selected companies. Results indicated that profitability significantly enhanced firm value, while leverage had no meaningful effect. Liquidity showed a positive but

statistically insignificant relationship. Interestingly, firm size negatively influenced value, suggesting larger firms tended to record lower market valuations within the sample. The study emphasized profitability as a key driver of firm value, while leverage appeared less relevant. Liquidity management was recommended to balance short-term obligations without undermining long-term value. Overall, strategies that improve profitability, such as strengthening return on assets, were encouraged to boost competitiveness and shareholder returns.

Ojeaga and Aigienohuwa (2024) investigated how financial information affects shareholders' investment decisions in Nigerian deposit money banks. Specifically, the study examined leverage and profitability analyses as determinants of equity shareholding. An ex post facto design was employed, with a population of 13 listed deposit money banks. Ten banks were purposively selected based on data availability, and financial reports from 2013 to 2022 formed the dataset. Using ordinary least squares (OLS) regression with descriptive statistics, the study found that leverage analysis had a significant positive influence on equity shareholding. The authors recommended that banks adopt prudent debt management practices, regularly reviewing their leverage to optimize financial health, minimize risks, and strengthen investor confidence.

Edori and Egileoniso (2024) examined the relationship between financial performance and investment decision-making from the perspectives of investors and stockbrokers. Guided by a positivist paradigm, the study used a survey design and purposive sampling, obtaining responses from 172 participants. Pearson correlation analysis revealed that ROI, ROE, ROA, and NPM each had significant positive effects on investment decisions, with correlation coefficients of 0.868, 0.822, 0.780, and 0.644 respectively. ROI and ROE were found to have very strong correlations, while ROA and NPM showed strong correlations. The study concluded that financial performance indicators substantially influence investor decisions in the Nigerian market.

Nworie et al. (2024) analyzed the effect of dividends on shareholder investment decisions in Nigerian listed deposit money banks, applying Signaling Theory as a framework. Investment decision was measured through equity shareholding levels. Using an ex post facto design, data from 10 purposively selected banks out of 13 listed institutions were examined, covering 2013 to 2022. Pooled least squares regression, conducted with EViews software, revealed that dividend payments significantly increased equity shareholding. The findings suggest

dividends serve as a strong signal that enhances investor confidence and investment decisions in the Nigerian banking sector.

Umoh (2024) analyzed how financial statements shape investment decisions in Nigerian deposit money banks listed on the Exchange Group. The study focused on earnings per share, dividend per share, and annual profit as predictors of return on equity. Using an ex post facto design, secondary data were drawn from UBA, Zenith Bank, and Access Bank Plc over the period 2012–2022, a timeframe that captures major economic and regulatory shifts in Nigeria. Panel regression analysis with E-Views 9 was employed. Results showed that earnings per share did not significantly affect return on equity, dividends per share had a strong positive influence, while profit for the year was only marginally insignificant. The study recommended that bank managers prioritize dividend policies to improve shareholder returns, while also enhancing profitability through efficiency, diversification, and cost reduction to indirectly strengthen return on equity.

Akinadew et al. (2023) investigated how financial reporting influences investment decisions in small and medium enterprises. Primary data were collected through interviews and questionnaires directed at key decision-makers in the sampled firms. Out of 150 distributed questionnaires, 100 were completed and returned. To ensure reliability, a re-test was conducted within the sample. The findings revealed that financial reporting significantly impacts investment choices. Specifically, the income statement, balance sheet, cash flow statement, and statement of changes in equity all had positive effects on decision-making. The study concluded that comprehensive financial reporting provides critical information that investors rely on when making investment decisions.

Nworie and Mba (2022) examined how firm characteristics affect the financial performance of listed food and beverage companies in Nigeria. The study looked at firm size, firm age, and leverage as determinants of return on assets. Using an ex post facto design, a purposive sample of five firms was selected, and secondary data were obtained from annual reports covering 2012–2021. Applying panel regression with a fixed effect model, the results showed that firm size had a positive but insignificant impact on return on assets, while firm age and leverage had significant negative effects. The study concluded that firm characteristics provide important indicators of financial performance, reflecting how effectively resources are managed.

Olaniyan et al. (2020) studied the impact of financial leverage on shareholder returns in Nigeria's insurance sector. Using generalized method of moments (GMM) estimation on panel data from 18 firms between 2008 and 2017, the results indicated that the debt ratio had a significant negative effect on shareholder returns. However, when debt-equity and interest coverage ratios were considered, the effects became positive and significant. The study concluded that the influence of leverage on returns depends on how leverage is measured, aligning with both the pecking order theory and alternative perspectives.

Shodiya et al. (2019) assessed the effect of shareholder wealth maximization on investment decisions in listed food and beverage firms. Seven companies were selected using purposive and stratified sampling from the 15 in the subsector. Data were sourced from financial reports spanning 2008–2017. Regression analysis showed that earnings per share and market price per share had no significant positive effect on investment decisions, while dividend per share had no significant negative effect. Nonetheless, the combined effect of these variables on shareholder wealth maximization was significant. The study recommended that food and beverage firms improve earnings, dividend payouts, and market share prices to attract greater investment.

Salawu and Olayinka (2016) investigated the relationship between market liquidity and investment decisions in 50 non-financial companies in Nigeria from 2006 to 2012. Secondary data were analyzed using descriptive statistics, pooled OLS, and fixed effect models. The study found that firm size and firm age were significant predictors of return on investment, while turnover ratio, as a proxy for liquidity, had a positive but insignificant effect. It was concluded that although market liquidity influences investment decisions positively, it is not a key determinant. Instead, firm size and age were emphasized as stronger indicators for predicting returns.

2.4 Gap in Literature

Prior studies have extensively examined the relationship between firm attributes, financial characteristics, and shareholder investment decisions across various sectors in Nigeria, yet little to no focus has been directed at natural resources firms. For instance, Dang et al. (2025) investigated determinants of shareholders' wealth in manufacturing companies, while Deshi et al. (2025) analyzed how firm financial characteristics drive the value of consumer goods companies. In the banking sector, Ojeaga and Aigienohuwa (2024), Nworie et al. (2024), and Umoh (2024) concentrated on leverage, dividends, and financial statement indicators as

determinants of investor decisions. Similarly, Edori and Egileoniso (2024) explored financial performance indicators, while Akinadew et al. (2023) assessed the influence of financial reporting on investment decisions in SMEs. Other sector-based studies include Nworie and Mba (2022) on firm characteristics in food and beverage firms, Olaniyan et al. (2020) on leverage in the insurance sector, Shodiya et al. (2019) on shareholder wealth maximization in listed food and beverage firms, and Salawu and Olayinka (2016) on market liquidity in non-financial companies. Collectively, these studies provide useful hints into firm traits and investment decisions, but they are largely sector-specific and exclude the natural resources sector, which is distinct due to its capital intensity, resource-based operations, and exposure to global commodity price volatility. Consequently, this study fills the gap by examining the effect of firm size, leverage, and liquidity on shareholder investment decisions in listed natural resources firms in Nigeria between 2015 and 2024, a sector yet to be systematically explored in the empirical literature.

3.0 Methodology

This study adopted an ex-post facto research design to investigate the effect of firm traits on shareholder investment decisions in listed natural resources firms in Nigeria. The choice of this design is appropriate because the study relies on already published financial data from annual reports of firms (John-Akamelu et al., 2025; Amedu et al., 2025). The variables under investigation (firm size, firm leverage, and firm liquidity) are historical and cannot be manipulated by the researcher. This design makes it possible to assess the causal relationship between firm traits and shareholder investment decision, measured by shareholder invested capital, without altering past events.

The study focused on natural resources firms listed on the Nigerian Exchange Group (NGX). These firms operate in industries such as mining, processing, and resource-based manufacturing, which are highly capital-intensive and play a crucial role in Nigeria's industrial and economic development. The sector provides a unique context for exploring how firm-specific traits influence shareholders' investment decisions. The population comprised the four natural resources firms listed on the Nigerian Exchange Group (NGX) as at 31st December 2024. These are:

1. Aluminium Extrusion Industries Plc
2. Industrial & Medical Gases Nigeria Plc
3. Multiverse Mining and Exploration Plc

4. Thomas Wyatt Nigeria Plc

Given the relatively small population, the study employed a census sampling technique. All four listed natural resources firms that consistently maintained their listing status within the period 2015–2024 were included. This approach ensures comprehensive coverage and eliminates sampling bias.

The study relied exclusively on secondary data obtained from the published annual reports and audited financial statements of the selected firms covering the period 2015–2024. Relevant data were extracted on firm size, firm leverage, and firm liquidity as proxies for firm traits, and shareholder invested capital as the proxy for shareholder investment decision. Data were coded and compiled into a structured panel dataset for analysis.

Table 3.1 Operational Measurement of Variables

Variable	Type	Measurement	Source
Firm Size	Independent	Natural log of total assets	Nworie and Mba (2022)
Firm Leverage	Independent	$\frac{\text{Liabilities}}{\text{Assets value}}$	Nworie and Mba (2022)
Firm Liquidity	Independent	$\frac{\text{Current asset}}{\text{Current liabilities}}$	Dang et al. (2025)
Shareholder Invested Capital	Dependent	Natural log of owners' equity	Shodiya et al. (2019)

Source: Researcher's Compilation (2025)

The study adapted the model by Salawu and Olayinka (2016) formulated the regression model below:

$$Roi_{it} = \beta_0 + \beta_1 fage_{it} + \beta_2 cp_{it} + \beta_3 finlev_{it} + \beta_4 fs_{it} + \beta_5 invopp_{it} + \beta_6 tor_{it} + \varepsilon_{it} \quad \text{_____eqi}$$

Where:

ROI_{it} represents Return on Investment of company *i* in period *t*;

FAGE_{it} is the Age of the company *i* at time *t*;

CP_{it} is the control power of the company *i* at time *t*;

FINLEV_{it} is the financial leverage of company *i* at time *t*;

FS_{it} is the firm size of the companies *i* at time *t*;

TOR_{it} is the turnover ratio of company *i* at time *t*;

INVOPPit is the investment opportunity of company *i* at time *t*.

However, the study modified the regression model above to arrive at the one used in the study below:

$$SIC_{it} = \alpha_0 + \beta_1 FSIZ_{it} + \beta_2 FLEV_{it} + \beta_3 FLIQ_{it} + \mu_{it} \quad \text{eqii}$$

Where:

SIC_{it} = Shareholder invested capital (proxy for shareholder investment decision) of firm *i* in year *t*

$FSIZ_{it}$ = Firm size of firm *i* in year *t*

$FLEV_{it}$ = Firm leverage of firm *i* in year *t*

$FLIQ_{it}$ = Firm liquidity of firm *i* in year *t*

α_0 = Intercept

β_1 – β_3 = Coefficients of the independent variables

μ_{it} = Error term

The analysis employed both descriptive and inferential statistical techniques. Descriptive statistics such as mean, standard deviation, minimum, and maximum were used to summarize the characteristics of the data. Correlation analysis was conducted to examine the relationships among the variables. For hypothesis testing, panel regression analysis was employed using the Fixed Effect Model, as suggested by the Hausman test results. The regression estimated the effects of firm size, firm leverage, and firm liquidity on shareholder invested capital. The level of statistical significance was set at 5% with a 95% confidence interval. The ex-post facto design was appropriate since the study utilized historical financial data without manipulation. The use of descriptive and correlation analyses provided a preliminary understanding of the dataset and ensured validity of results. The panel regression framework was suitable for controlling unobserved heterogeneity across firms and years. The Fixed Effect Model was chosen as it provides consistent and unbiased estimates where firm-specific effects are correlated with explanatory variables.

Hypotheses were tested at the 5% significance level. Where the p-value of a regression coefficient is less than 0.05, the null hypothesis is rejected, indicating a statistically significant effect of the independent variable on shareholder invested capital. If the p-value is equal to or greater than 0.05, the null hypothesis is not rejected.

4.0 Data Analysis

4.1 Descriptive Analysis and Model Diagnostics

The study examined the effect of firm traits on shareholder investment decisions in listed natural resources firms in Nigeria. Specifically, the study assessed the effects of firm size, firm leverage, and firm liquidity on shareholder invested capital. Secondary data were collected from annual reports and audited financial statements of the selected firms between 2015 and 2024, as shown in Appendix A.

Table 4.1 Descriptive Analysis.

	SIC	FSZ	FLEV	FLIQ
Mean	3.304724	6.375290	0.807470	0.832741
Median	6.090582	6.590390	0.665105	0.713596
Maximum	6.771922	7.172556	1.969661	2.726636
Minimum	-5.596575	5.583560	0.150699	0.001982
Std. Dev.	5.095547	0.450495	0.546875	0.799622
Skewness	-1.146765	-0.796747	0.857614	0.372331
Kurtosis	2.331438	2.267095	2.489796	1.814111
Jarque-Bera	9.512093	5.127289	5.337187	3.268092
Probability	0.008600	0.077024	0.069350	0.195138
Sum	132.1890	255.0116	32.29882	33.30963
Sum Sq. Dev.	1012.619	7.914873	11.66383	24.93642
Observations	40	40	40	40

Source: Eviews 10 Output (2025)

In Table 4.1, shareholder invested capital (SIC), measured as the natural log of owners' equity, has a mean value of 3.30, which suggests that on average, the listed natural resources firms maintained moderate levels of shareholder capital during the period under review. The maximum of 6.77 and minimum of -5.59 show a wide disparity among firms, reflecting that while some firms recorded significant equity, others had negative equity, possibly due to accumulated losses. The high standard deviation of 5.09 further confirms this variability. The skewness value of -1.14 indicates that the distribution of SIC is negatively skewed, with more firms concentrated at the lower end of shareholder capital. The kurtosis of 2.33 suggests a distribution slightly flatter than normal. The Jarque-Bera probability of 0.0086 shows that SIC data are not normally distributed, which may influence regression estimations.

Firm size (FSZ), measured as the natural log of total assets, records a mean of 6.38, indicating that on average, the listed firms were moderately large in asset base. The maximum of 7.17 and minimum of 5.58 show that while firms are relatively close in size, there is still some variation in their total assets. The standard deviation of 0.45 supports this by suggesting that firm size is relatively stable across the sample. Skewness is -0.79 , showing a leftward lean in distribution, while kurtosis at 2.27 indicates a fairly normal spread. The Jarque-Bera probability of 0.077 suggests the firm size variable is approximately normally distributed, making it suitable for regression analysis without major transformation.

For firm leverage (FLEV), defined as total debt divided by total assets, the mean value of 0.81 shows that debt accounted for a significant proportion of firm financing among natural resources firms. The maximum value of 1.97 indicates that some firms operated with debt levels almost twice their asset base, while the minimum of 0.15 shows others maintained relatively low leverage. The standard deviation of 0.55 highlights the variations in capital structure choices across firms. The skewness of 0.86 reflects a rightward distribution, suggesting more firms recorded higher leverage. The kurtosis of 2.49 suggests a moderately flat distribution, while the Jarque-Bera probability of 0.069 shows that the variable is close to normality, although with some deviations.

Firm liquidity (FLIQ), defined as current assets divided by current liabilities, shows a mean of 0.83, implying that on average, the firms could not fully cover their short-term obligations with current assets, as the ratio falls below the benchmark of 1. The maximum of 2.73 suggests that some firms had strong short-term financial health, while the minimum of 0.002 indicates severe liquidity constraints in others. The standard deviation of 0.80 confirms significant differences in liquidity positions. Skewness of 0.37 indicates a slight rightward distribution, meaning more firms had liquidity levels above the average. The kurtosis of 1.81 points to a distribution flatter than normal. The Jarque-Bera probability of 0.195 shows that liquidity is normally distributed, making it statistically reliable for further regression analysis.

Table 4.2 Pearson Correlational Analysis.

Pearson Correlational Analysis: Ordinary			
Date: 09/20/25 Time: 05:55			
Sample: 2015 2024			
Included observations: 40			

Correlation				
Probability	SIC	FSZ	FLEV	FLIQ
SIC	1.000000			

FSZ	0.949251	1.000000		
	0.0000	-----		
FLEV	-0.908018	-0.806993	1.000000	
	0.0000	0.0000	-----	
FLIQ	0.538035	0.442502	-0.749759	1.000000
	0.0003	0.0042	0.0000	-----

Source: Eviews 10 Output (2025)

Table 4.2 shows the Pearson correlation results between shareholder invested capital (SIC) and the independent variables at a 5% significance level. Firm size (FSZ) has a very strong positive correlation with SIC at 0.95, with a probability value of 0.0000, which is below 0.05, indicating statistical significance. Firm leverage (FLEV) shows a strong negative correlation of -0.91 with SIC, also significant at the 5% level, meaning that higher debt ratios are linked to lower shareholder capital. Firm liquidity (FLIQ) has a moderate positive correlation of 0.54 with SIC, and its probability of 0.0003 confirms significance at the 5% level. These results suggest that firm size, leverage, and liquidity all significantly influence shareholder invested capital in Nigerian natural resources firms, with size and leverage being the most dominant factors.

Table 4.3 Hausman Specification Test.

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5307.194679	3	0.0000

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Source: Eviews 10 Output (2025)

Table 4.3 presents the Hausman specification test, which was conducted to determine the appropriate panel regression model for the study. The probability value of 0.0000 is less than the 5% significance level, indicating that the null hypothesis, which favors the random effects model, is rejected. This result shows that the fixed effects model is more suitable for the analysis because it accounts for unobserved heterogeneity across the sampled natural resources firms that may be correlated with the explanatory variables. Therefore, the fixed effects model provides more reliable and consistent estimates for examining the effect of firm traits on shareholder invested capital.

4.2 Test of Hypotheses

Table 4.4 Test of Hypotheses

Dependent Variable: SIC				
Method: Panel Least Squares				
Date: 09/20/25 Time: 05:53				
Sample: 2015 2024				
Periods included: 10				
Cross-sections included: 4				
Total panel (balanced) observations: 40				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FSZ	0.914281	0.123636	7.394938	0.0000
FLEV	-0.699958	0.086082	-8.131259	0.0000
FLIQ	0.010895	0.054545	0.199744	0.8429
C	-1.967958	0.779670	-2.524090	0.0166
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.999776	Mean dependent var		3.304724
Adjusted R-squared	0.999735	S.D. dependent var		5.095547
S.E. of regression	0.082947	Akaike info criterion		-1.983613

Sum squared resid	0.227044	Schwarz criterion	-1.688059
Log likelihood	46.67226	Hannan-Quinn criter.	-1.876750
F-statistic	24524.55	Durbin-Watson stat	1.053241
Prob(F-statistic)	0.000000		

Source: Eviews 10 Output (2025)

Table 4.4 presents the test of hypotheses using the fixed effects panel regression model, and the validity of the model is first assessed through the model fitness statistics. The adjusted R-squared value of 0.999735 indicates that more than 99% of the variation in shareholder invested capital is explained by firm size, firm leverage, and firm liquidity. This shows that the model is a very strong fit for the data. Additionally, the probability of the F-statistic is 0.000000, which is lower than the 5% significance level. This confirms that the overall model is statistically significant, and the explanatory variables collectively exert a meaningful effect on shareholder invested capital. Regarding the constant term, the coefficient is -1.967958 with a probability of 0.0166, which is significant at the 5% level. This means that when all the independent variables are held at zero, shareholder invested capital is expected to reduce by 1.97 units, reflecting the baseline influence when firm size, leverage, and liquidity are not considered.

4.2.1 Test of Hypothesis I

H01: Firm size has no significant effect on shareholder invested capital in listed natural resources firms in Nigeria.

In testing Hypothesis I, the coefficient of firm size is 0.914281 with a probability value of 0.0000, which is significant at the 5% level. This shows that a one-unit increase in firm size, measured as the natural logarithm of total assets, increases shareholder invested capital by about 0.91 units. Since the effect is positive and highly significant, the alternate hypothesis that firm size has a significant and positive effect on shareholder invested capital is accepted. This implies that larger firms are more attractive to shareholders, as their invested capital tends to grow with increases in firm size.

4.2.2 Test of Hypothesis II

H02: Firm leverage has no significant effect on shareholder invested capital in listed natural resources firms in Nigeria.

For Hypothesis II, the coefficient of firm leverage is -0.699958 with a probability value of 0.0000, which is also significant at the 5% level. This indicates that a one-unit increase in leverage, measured as the ratio of total debt to total assets, reduces shareholder invested capital by approximately 0.70 units. The effect is negative and statistically significant, leading to the acceptance of the alternate hypothesis that leverage has a significant and negative effect on shareholder invested capital. This finding suggests that higher debt levels discourage shareholder investment in natural resources firms, likely due to increased financial risk associated with highly leveraged companies.

4.2.3 Test of Hypothesis III

H03: Firm liquidity has no significant effect on shareholder invested capital in listed natural resources firms in Nigeria.

In the case of Hypothesis III, the coefficient of firm liquidity is 0.010895 with a probability value of 0.8429, which is greater than the 5% significance level. This indicates that although a one-unit increase in liquidity, measured as the ratio of current assets to current liabilities, raises shareholder invested capital by 0.01 units, the effect is not statistically significant. Consequently, the null hypothesis that liquidity has no significant effect on shareholder invested capital is accepted. This means that liquidity position, in this case, does not play a decisive role in shaping shareholder investment decisions in natural resources firms.

4.3 DISCUSSION OF FINDINGS

The study found that firm size has a positive and significant effect on shareholder invested capital among listed natural resources firms in Nigeria ($\beta = 0.914281$, $p = 0.0000$). This outcome suggests that larger firms, measured by their asset base, tend to attract greater shareholder capital because investors often associate size with stability, stronger operational capacity, and long-term sustainability. Larger firms are also more visible in the market, command stronger reputations, and are believed to withstand economic shocks better than smaller firms. This finding agrees with Salawu and Olayinka (2016), who reported that firm size significantly predicted return on investment among non-financial firms. It also aligns with Edori and Egileoniso (2024), who established that financial performance indicators shape investor choices, with larger firms often showcasing stronger performance. Similarly, Dang et al. (2025) emphasized the importance of firm characteristics such as governance and structure, further underscoring the role of size in driving shareholder wealth. However, Deshi et al. (2025) presented a contrary position by showing that firm size negatively influenced

firm value in consumer goods companies, possibly due to inefficiencies associated with excessively large structures. Nonetheless, for capital-intensive natural resources firms, size appears to act as a signal of credibility and growth potential, thereby encouraging shareholder investment.

In contrast, firm leverage was found to have a negative and significant effect on shareholder invested capital ($\beta = -0.699958$, $p = 0.0000$). This finding indicates that as debt levels rise, shareholders are discouraged from committing further capital because of the heightened financial risk associated with high leverage. High reliance on borrowed funds increases the likelihood of financial distress, especially in volatile sectors like natural resources, where revenues are sensitive to fluctuations in global commodity prices. This result is consistent with Olaniyan et al. (2020), who documented a significant negative relationship between debt ratios and shareholder returns in Nigeria's insurance sector. It also aligns with Nworie and Mba (2022), who showed that leverage exerted a significant negative effect on financial performance in listed food and beverage firms. Dang et al. (2025) also highlighted the adverse effects of high debt levels on shareholder wealth in manufacturing firms. On the other hand, Ojeaga and Aigienohuwa (2024) found leverage to positively and significantly influence equity shareholding in deposit money banks, highlighting that the effect of leverage may vary across industries. In the case of natural resources firms, the risks of debt likely outweigh the benefits, as investors prefer companies that rely less on borrowing and more on equity-based financing to ensure long-term sustainability.

Finally, the study revealed that firm liquidity had a positive but nonsignificant effect on shareholder invested capital ($\beta = 0.010895$, $p = 0.8429$). While a healthy liquidity position is expected to ensure that firms can meet short-term obligations and operate efficiently, it does not appear to be a decisive factor for shareholders in the natural resources sector. This may be because investors in such firms tend to focus more on long-term capacity, asset base, and capital structure rather than short-term cash positions, especially given the capital-intensive nature of the industry. This finding is consistent with Dang et al. (2025), who found liquidity to have no significant impact on shareholders' wealth in Nigerian manufacturing firms. Deshi et al. (2025) also reported a positive but statistically insignificant relationship between liquidity and firm value in consumer goods companies. Similarly, Salawu and Olayinka (2016) observed that liquidity had a positive but nonsignificant effect on investment decisions in non-financial companies. By contrast, Edori and Egileoniso (2024) concluded that

financial performance indicators such as return on assets and return on equity had significant influences on investment decisions, suggesting that in some sectors liquidity plays a stronger role. For natural resources firms, however, liquidity appears not to be the main concern for shareholders, who prioritize scale and prudent debt management when making investment decisions.

5.0 CONCLUSION AND RECOMMENDATION

The results show how shareholder investment decisions in listed natural resources firms are strongly shaped by the structural and financial features of the firms. The findings reveal that shareholder invested capital is not random but tied closely to the financial architecture of the companies. Larger firms, with greater total assets, appear more capable of attracting shareholder confidence, suggesting that the scale of operations and asset base provide an assurance of stability and growth potential. Conversely, high levels of debt diminish shareholder capital, reflecting concerns over financial risk and the strain that leverage places on the sustainability of investments. Although liquidity showed a positive direction, its lack of statistical strength highlights that investors in this sector may not place as much weight on short-term solvency indicators compared to long-term structural considerations such as asset size and debt profile. Taken together, the findings present a picture of a sector where shareholder investment is more responsive to the durability and risk structure of firms than to their immediate working capital positions, which may reflect the capital-intensive nature of natural resources operations and the sensitivity of investors to stability in the face of global price fluctuations and domestic financial constraints. Based on the findings, we recommend that:

1. The management of listed natural resources firms in Nigeria should strategically pursue growth through asset expansion and consolidation of operations by reinvesting profits into productive assets, engaging in carefully selected mergers or acquisitions, and adopting policies that enhance long-term capacity. Such deliberate actions would help build investor confidence, as shareholders are more inclined to commit capital to firms that demonstrate scale and operational strength.
2. Boards of directors of listed natural resources firms should implement stricter debt management frameworks by setting optimal debt-equity thresholds, renegotiating existing debt to reduce interest burdens, and prioritizing equity financing for expansion projects where feasible. Doing so would limit financial vulnerability, reassure investors about the firm's

sustainability, and ultimately improve the attractiveness of these firms to both existing and potential shareholders.

3. Financial managers should still maintain healthy liquidity levels to safeguard day-to-day operations and ensure resilience against short-term shocks. However, rather than overemphasizing liquidity as a driver of shareholder investment, firms should align liquidity management with broader strategic goals such as funding capital-intensive projects and ensuring long-term value creation.

5.2 Contribution to Knowledge

This study adds to existing literature by focusing on natural resources firms in Nigeria, a sector that has been largely overlooked in previous research. While earlier studies such as Dang et al. (2025) on manufacturing, Deshi et al. (2025) on consumer goods, Ojeaga and Aigienohuwa (2024), Nworie et al. (2024), and Umoh (2024) on banking, as well as Akinadew et al. (2023), Edori and Egileoniso (2024), Nworie and Mba (2022), Olaniyan et al. (2020), Shodiya et al. (2019), and Salawu and Olayinka (2016) across other sectors, have provided evidence on firm traits and investment decisions, none have directly examined natural resources firms. By analyzing the effects of firm size, leverage, and liquidity on shareholder investment decisions in listed natural resources firms between 2015 and 2024, this study broadens the scope of knowledge and provides evidence from a sector that is unique for its capital intensity, dependence on resource extraction, and vulnerability to global price changes.

5.3 Limitations of the Study and Suggestion for Further Studies

This study is not without limitations. First, it was based on only four listed natural resources firms in Nigeria, which makes the sample size relatively small compared to other sectors with larger populations. This limits the ability to generalize the findings to all natural resources companies in Nigeria, especially those not listed on the Exchange. Secondly, the study depended solely on secondary data obtained from annual reports and audited financial statements. While these are reliable sources, they may not fully capture some qualitative aspects of firm traits or the influence of external factors such as government policies, global market changes, or management decisions. Another limitation is that the study focused only on firm size, leverage, and liquidity as proxies of firm traits, leaving out other possible factors like profitability, firm age, or corporate governance practices, which may also shape shareholder investment decisions.

Future research should extend the scope by including more firms, possibly combining both listed and unlisted natural resources companies to improve generalization. Researchers can also explore a longer period beyond 2024 to capture more economic cycles. Additional firm traits such as profitability, corporate governance, and firm age should be considered alongside those examined in this study. Comparative studies across sectors, such as natural resources versus manufacturing or banking, may also provide deeper understanding of sectoral differences. Finally, a mixed-methods approach that combines secondary data with surveys or interviews could capture qualitative perspectives on investor behavior and firm-level decisions.

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