Effect of Financial Leverage on Financial Performance of Selected Publicly Listed Nigerian Manufacturing Firms

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Abstract

Research purpose: The study examined the effect of financial leverage on the financial performance of selected publicly listed Nigerian manufacturing firms. The specific objectives are to; examine the effect of operating leverage on the financial performance and evaluate the effect of consumer leverage on the financial performance of selected publicly listed Nigerian manufacturing firms.
Methodology: A descriptive survey research design was adopted for the study. A structured questionnaire with questions on a yes-or-no basis and a four-point Likert scale was used to collect data. The statistical tools used are exploratory data analysis (respondent demographic statistics) and Chi-square. SPSS 27.0 was used for the analysis.
Findings: Operating leverage has a significant effect on the financial performance (Given that X^2 =67.0214 table = 9.488, df = 4). While consumer leverage statistically and significantly affects the financial performance (Given that. X^2 = 33.0528, table 5.991 df = 2).
Conclusion: The researchers concluded that financial leverage has a significant effect on the financial performance of selected publicly listed Nigerian manufacturing firms.
Recommendation: It is recommended that Nigerian manufacturing firms should endeavour to adopt tailored leverage optimization strategies that take into account the differential impacts of operating and consumer leverage on financial performance.

Keywords: *Financial, firm, Leverage, Performance, Publicly*

1.1 Introduction

In the realm of corporate finance, the concept of financial leverage has long been a subject of profound interest and scrutiny. Financial leverage, defined as the use of debt financing to amplify returns and potentially enhance shareholder wealth, represents a double-edged sword for firms. The utilisation of financial leverage, characterised by the strategic use of debt financing to augment returns and potentially enhance shareholder value, is a fundamental aspect of corporate finance. It represents a critical balancing act for firms, offering avenues for expansion and growth while simultaneously exposing them to heightened risks and vulnerabilities. Financial leverage stands as a cornerstone concept within the realm of corporate finance, representing a strategic mechanism by which firms utilise debt financing to enhance their returns on equity investment. In essence, it embodies the principle of amplifying gains or losses through the judicious use of borrowed capital. By leveraging debt, firms aim to magnify profits, increase operational capacity, and drive growth initiatives. However, this approach introduces a complex interplay of risks and rewards, making the management of financial leverage a critical determinant of firm performance and sustainability.

The concept of financial leverage operates on the principle of the leverage effect, wherein a company's earnings per share (EPS) and return on equity (ROE) exhibit magnified movements in response to changes in operating income. Through the deployment of debt, firms can augment their returns to shareholders beyond what could be achieved solely through equity financing. This amplification effect arises from the fact that debt capital typically carries a fixed cost in the form of interest payments, which, when compared to the firm's return on investment, can increase profitability. While financial leverage offers the potential for enhanced returns, it also introduces inherent risks that warrant careful consideration. Excessive reliance on debt financing can elevate a firm's financial leverage ratio, thereby heightening its exposure to financial distress, bankruptcy, and insolvency in periods of economic downturn or adverse market conditions. Moreover, the servicing of debt obligations places a recurring burden on the firm's cash flows, potentially limiting its flexibility and ability to pursue growth opportunities or withstand unexpected shocks.

The management of financial leverage involves striking a delicate balance between risk and return, as firms seek to optimise their capital structure to maximise shareholder value while safeguarding against excessive financial risk. This requires careful assessment of factors such as industry dynamics, market conditions, interest rate fluctuations, and regulatory constraints. Furthermore, firms must consider the impact of leverage on key financial metrics such as earnings stability, liquidity, solvency, and creditworthiness, recognizing that the optimal level of leverage may vary across industries and business cycles. In the context of the Nigerian manufacturing sector, where firms operate within a dynamic and often challenging economic environment, the implications of financial leverage on financial performance are of paramount importance.

1.2 Statement of the Problem

Nigeria, Africa's largest economy, has a burgeoning manufacturing sector that plays a pivotal role in its economic development and industrialization agenda. Despite the sector's significance, it faces numerous challenges, including limited access to financing, volatile macroeconomic conditions, and infrastructural deficiencies. Against this backdrop, the use of financial leverage by manufacturing firms becomes a critical determinant of their survival, growth, and profitability. Examining the relationship between financial leverage and financial performance is imperative to provide insights into the strategies adopted by these firms to navigate the complex business environment and to inform stakeholders about the risks and opportunities associated with leveraging.

1.3 Objective of the Study

The main objective of this study is to examine the effect of financial leverage on the financial performance of selected publicly listed Nigerian manufacturing firms. The specific objectives are to;

i. Examine the effect of operating leverage on the financial performance of selected publicly listed Nigerian manufacturing firms.
ii. Evaluate the effect of consumer leverage on the financial performance of selected publicly listed Nigerian manufacturing firms.

1.4 Hypotheses of the study

i. Operating leverage has no significant effect on the financial performance of selected publicly listed Nigerian manufacturing firms.
ii. Consumer leverage has no significant effect on the financial performance of selected publicly listed Nigerian manufacturing firms.

2.0 Review of Related Literature

2.1 Conceptual Review

2.1.1 Financial Leverage

Financial leverage is the use of borrowed money (debt) to finance the purchase of assets with the expectation that the income or capital gain from the new asset will exceed the cost of borrowing. Financial leverage is the company's ability to utilize fixed financial charges to increase the earnings before interest and tax of a company's earnings per share. If a company does not utilize fixed cost-bearing securities, earnings before interest and tax will change and consequently lead to a change in earnings per share. If a firm has no fixed financial charges especially preference dividends and interest it's an indication of financial leverage. Financial leverage gives a firm the ability to magnify its earnings before interest rate and tax thus increasing earnings per share (Saleem, Rahman & Sultana, 2004). Financial leverage is primarily concerned with the financial activities that involve raising funds from the sources for which a firm has to bear fixed charges such as interest expenses, loan fees, etc. These sources include long-term debt (i.e., debentures, bonds, etc.) and preference share capital. Firms use either debt/financial leverage or owners' capital to finance a firm.

Financial leverage refers to the application of debt financing and borrowed capital in an attempt to increase a firm's operations and profitability. Financial leverage is majorly measured by expressing long-term liabilities to the equity of a firm. A firm is considered leveraged when the firm is partially financed by both debt and equity. Most firms survive with a significant liquidity level which is mainly achievable through the use of debt. Many companies use debt to leverage their profits and capital. This means companies are likely to use debt/leverage to increase assets which in turn increases production and profits. Financial leverage is the strategic endeavor of borrowing

money to invest in assets. The goal is to have the return on those assets exceed the cost of borrowing the funds. The goal of financial leverage is to increase profitability without using additional personal capital, Hayes (2024).

2.1.2 Measures of Financial Leverage

There is an entire suite of leverage financial ratios used to calculate how much debt a company is leveraging in an attempt to maximize profits. Here are several common leverage ratios.

- Debt ratio
- Debt–equity ratio
- Interest coverage

a. Debt Ratio

You can analyze a company's leverage by calculating its ratio of debt to assets. This ratio indicates how much debt it uses to generate its assets. If the debt ratio is high, a company has relied on leverage to finance its assets. A ratio of 1.0 means the company has $1 of debt for every $1 of assets. If it is lower than 1.0, it has more assets than debt—if it is higher than 1.0, it has more debt than assets.

Debt Ratio = Total Debt ÷ Total Assets

Keep in mind that when you calculate the ratio, you're using all debt, including short- and long-term debt vehicles.

b. Debt-to-Equity (D/E) Ratio

Instead of looking at what the company owns, you can measure leverage by looking strictly at how assets have been financed. The debt-to-equity (D/E) ratio is used to compare what the company has borrowed to what it has raised from private investors or shareholders.

Debt-to-Equity (D/E) Ratio = Total Debt ÷ Total Equity

A D/E ratio greater than 1.0 means a company has more debt than equity. However, this doesn't necessarily mean a company is highly leveraged. Each company and industry typically operates in a specific way that may warrant a higher or lower ratio.

c. Interest coverage

The third measure of financial leverage is commonly known as the coverage ratio. The reciprocal of interest coverage is a measure of the firm's income gearing.

2.1.3 The importance of financial leverage:

1. It helps the financial manager to design an optimum capital structure. The optimum capital structure implies that combination of debt and equity at which the overall cost of capital is minimum and the value of the firm is maximum.

2. It increases earnings per share (EPS) as well as financial risk.

3. A high financial leverage indicates the existence of high financial fixed costs and high financial risk.

4. It helps to bring balance between financial risk and return in the capital structure.

5. It shows the excess return on investment over the fixed cost on the use of the funds.

6. It is an important tool in the hands of the finance manager while determining the amount of debt in the capital structure of the firm.

7. Financial leverage is important as it creates opportunities for investors and businesses. That opportunity comes with high risk for investors because leverage amplifies losses in downturns. For businesses, leverage creates more debt that can be hard to pay if the following years present slowdowns, (Thakur, 2015).

2.1.4 Operating leverage

The operating leverage is concerned mainly with fixed costs as the cost continuously incurred by the firm regardless of the volume of production and sales. Thus, the share of fixed unit costs will decrease when the production increases. This will result in additional net profits. The variable costs are directly related to production. The share of a unit of variable costs remains constant as production levels change and the price is associated with the policy of the firm and often by factors beyond control. Operating leverage is a cost-accounting formula (a financial ratio) that measures the degree to which a firm or project can increase operating income by increasing revenue. A business that generates sales with a high gross margin and low variable costs has high operating leverage. Operating leverage is defined as the ratio of fixed costs to variable

costs incurred by a company in a specific period. If the fixed costs exceed the amount of variable costs, a company is considered to have high operating leverage. Such a firm is sensitive to changes in sales volume and the volatility may affect the firm's EBIT and returns on invested capital. Operating leverage is related to the firm's operating cost structure, helps measure the business risk of the firm, and is determined by the relationship between Sales revenue and EBIT (Operating Income) of the firm and Higher Degree of Operating Leverage (DOL) shows the higher degree of Business risk to the firm.

According to Watson and Head (2010), operating leverage provides a vivid explanation of the extent to which an organization relies on fixed costs in its quest to maximize its operating profit. It should be noted that an increase in profits is a result of controlling the fixed-cost components of the company such that the total revenue covers a higher margin than the fixed cost of the product. That is, when operating leverage continues to increase, there is the likelihood of an equal proportional increase in the fixed operating cost of the company which has the propensity of decreasing the margin of the operating profit of the organization in the long run. In effect, if the variable cost component is predominant among the operating cost of the organization then there is also the likelihood that the operating leverage of the company will decline and a comparable effect can be envisaged on the net profit for a company with a high degree of financial leverage. High operating leverage is common in capital-intensive firms such as manufacturing firms since they require a huge number of machines to manufacture their products. Regardless of whether the company makes sales or not, the company needs to pay fixed costs such as depreciation on equipment, overhead on manufacturing plants, and maintenance costs, (Hayes, 2024),

2.1.5 Importance of Operating Leverage:

1. It gives an idea about the impact of changes in sales on the operating income of the firm.

2. A high degree of operating leverage magnifies the effect on EBIT for a small change in the sales volume.

3. A high degree of operating leverage indicates an increase in operating profit or EBIT.

4. High operating leverage results from the existence of a higher amount of fixed costs in the total cost structure of a firm which makes the margin of safety low.

5. High operating leverage indicates a higher amount of sales required to reach the break-even point.

6. Higher fixed operating cost in the total cost structure of a firm promotes higher operating leverage and its operating risk.

7. A lower operating leverage gives enough cushion to the firm by providing a high margin of safety against variation in sales.

2.1.6 Consumer leverage

Consumer Leverage is derived by dividing a household's debt by its disposable income. Households with a higher calculated consumer leverage have high degrees of debt relative to what they make and are, therefore, highly leveraged. The consumer leverage ratio is used to quantify the amount of debt the average American consumer has relative to their disposable income. Some economists have stated that the rapid increase in consumer debt levels has been a contributing factor to corporate earnings growth over the past few decades. Others blamed the high level of consumer debt as a major cause of the Great Recession.

Consumer leverage ratio = Total household debt ÷ Disposable personal income

2.1.7 Financial Performance

Financial performance refers to a firm's ability to achieve its financial goals and objectives. Nduati (2010) deduced that a firm's financial performance depends on the firm's asset utilization in carrying out its income-generating business activities. Financial performance can also be explained as the firm's general well-being, that is, the availability and generation of more finances by a firm over a certain period. Financial analyst mostly uses financial performance as a measure to gauge and compare the performance of different firms either in the same industry or different industries. This is a key tool in making sound investment decisions. Financial performance is, in summary, a crucial objective that firms especially profit-oriented firms desire or aim to achieve. Financial performance is a key measure of the

performance of any firm. A firm's ability to make and increase profits depends on the business activities and business capacity. Business capacity is the competence of financial management to source finances when required from the cheapest source/right source to finance a firm's assets.

Business activity refers to the company's efficiency in the utilization of assets to increase production capacity. When a firm is making great profits it can tolerate high debt levels since it has a higher ability to meet financial obligations arising from debt acquisition. This means that profit-earning firms are more likely to add more debt to the capital structure as compared to firms making losses, this shows that financial performance is key in making financial leverage decisions, (Kale, 2014). Financial performance is measured in terms of return on equity expressed as a ratio of earnings before interest and taxes to total equity. Financial performance is more attached to components of a firm's financial statements. Financial performance is a crucial measure of the economic success of a firm such as how the firm is achieving set financial goals and shareholders' wealth maximization objective. The firm's shareholders and stakeholders are mainly concerned about financial performance before they can inject capital or finances into the firm. The financial performance of a company is characterized by the company's competitiveness: the firm's business potentiality, ability to pay the financial obligation, social corporate responsibilities, increased sales and production, and high profits. Increases in prices and sales are not indicators of financial performance, sales are not determinants of improved financial performance of a firm (Kithandi, 2019).

2.1.8 Financial Leverage and Financial Performance

Various empirical and theoretical explanations have attempted to explain how leverage and a firm's performance are related. Theoretically, the pecking order hypothesis contends that companies have an order of preference when it comes to sourcing finances. The order of financing is based on the cost related to such finance types and their availability. The Modigliani and Miller theory affirms that in any perfect market, a firm's value is not dependent on the firm's capital structure mix of equity and debt. The Trade-off theory proposes that an ideal structure of capital is only reached if there is a balance between the cost of debt financing and the debt benefits to the firm. Agency theory supports that leverage can be used as a solution to any agency

problem that might arise (Jensen, 1976). Kale (2014) did a study on financial leverage and financial performance. The study concluded that a positive correlation exists between the debt-equity ratio and sales growth and return on assets. The study also found that firms with high-levered firms were more profitable compared to less-levered firms and also found that a negative relationship exists between the debt-equity ratio and earnings per share.

Similarly, Wald (2000) in his study observed that firms with high amounts of profits are likely to have lower debt/leverage levels as compared to firms with low profits since these firms will tend to use their earnings/profits to finance their investments before undertaking external financing. In his study he also noted that stock prices are a reflection of a firm's financial performance, that is, when stock prices increase the firms tend to issue equity in place of debt, which helps to keep the leverage levels low. Similar findings were reported by Wald (1999) and Wald (2000). The most key determinant of a company's debt level/leverage is financial performance which adversely affects the return on asset ratio. A negative relationship exists between the return on assets ratio (debt to assets ratio) and the non-debt tax shield, and also between a company's leverage behaviour and its profitability. Financial leverage leads to an improvement in the financial performance of a facility because an increase leads to an increase in profits and borrowing that creates tax abundance improves the return on the shareholders' equity and maintains control of the facility(Alsaeed, 2000).

2.2 Theoretical Review

2.2.1 Modigliani-Miller Theorem

Modigliani-Miller (1958) argues that the firm's value is measured by assets associated with risk and the revenue generation capacity of the assets. This theorem further argues that the firm's market value is not affected by investment financing decisions or dividend distribution decisions. A firm can decide to finance its investments through the issuance of shares, borrowed capital, or retained earnings/reinvesting profits. This theory assumes that in an imperfect market, the choice between the use of equity or debt to finance a firm's investment makes no difference. This theorem states that the value of any firm is not associated or dependent with the financing decision made or capital Therefore, the firm's capital structure is an irrelevant proxy in

determining the firm's Value. Therefore, whether a firm is highly levered or lowly leveraged, the capital structure mix has no significant effect on the firm's value, (Modigliani & Miller, 1963).

2.2.2 Trade-off Theory

The trade-off theory claims that companies should aim to find the optimal level of financial leverage. With the optimal level of financial leverage, it means the gains and costs of financial leverage are balanced (Myers, 1984). This implies that there should be a relationship between financial leverage and financial performance, where financial leverage affects financial performance (Brealey, Myers, and Allen, 2017). The advantages of financial leverage are according to the theory related to the "tax advantage of debt" because of the deductibility of interest expenses, but also the increased cash flows (Modigliani and Miller, 1958; Kraus and Litzenberger, 1973). The tax advantage of debt indicates that larger companies measured by total assets should use more financial leverage than small companies since they have more capital to "protect" (Ebaid, 2009). According to the trade-off theory, the margin benefit of financial leverage decreases, unlike the disadvantages of the financial leverage-curve which constantly increases when the financial leverage increases. These factors could according to the trade-off theory be the reasons why it is more common for large companies to. use financial leverage than small companies (Brealey, Myers, and Allen, 2017). The trade-off theory can with some success explain factors that affect how companies behave when it comes to financial leverage. It can be how risk avert the decision makers are, but also if the company's assets contain a lot of intangible assets or if the company's return differs a lot from year to year. High-tech companies often use a relatively low financial leverage, unlike industries like airlines which borrow a lot of capital because their assets are relatively "safe" and tangible (Brealey, Myers, and Allen, 2017).

2.3 Empirical Review

Aloshaibat (2021) conducted a study on the effect of financial leverage on the financial performance of Jordanian public shareholding companies. This study aims to demonstrate the effect of financial leverage measured through the liability-to-equity ratio on financial performance measured by the return on equity and the return on assets (ROA) in Jordanian public shareholding financial companies listed on the

Amman Stock Market. A descriptive analytical approach and simple regression analysis were used for this study. The results revealed that financial leverage affects the financial performance measured through the return on property rights in Jordanian public shareholding companies (ROE) and financial leverage does not affect financial performance measured through ROA.

Alabri et al (2021) conducted a study to determine the link between financial leverage and firm performance in Omani financial firms. The study aims to evaluate the financial leverage and firm performance of listed companies in a Muscat stock exchange: evidence from Oman. A cross-sectional quantitative method of analysis was used. The findings discovered a positive link between financial leverage and firm performance and also show that Omani financial firms are profitable as pointed out by the performance.

Abubakar (2022) conducted a study on the effect of financial and operating leverages on the financial performance of listed oil and gas companies in Nigeria. This study investigates the impact of the degree of financial and operating leverages on financial performance, using panel data sourced from the annual reports and financial statements of six listed oil and gas companies in Nigeria from 2009 to 2018. The results revealed that the degree of financial leverage is not significantly associated with return on asset, while the degree of operating leverage is significantly positively associated with return on asset.

Medeiros et al (2006) conducted a study to investigate the impact of the degree of operating leverage on stock returns in the Brazilian market. This study aims to study the impact of the degree of operating leverage on stock returns using an empirical study of the Brazilian market. Panel-data regressions were used for this study. The results revealed a positive and significant relationship between the degrees of operating leverage on stock returns in the Brazilian market, as expected.

3.0 Methodology

A descriptive survey research design was adopted for the study. To examine the effect of financial leverage on the financial performance of selected publicly listed Nigerian manufacturing firms, a survey methodology was used in this study. 10 Nigerian companies were chosen based on their proficiency in financial performance. A simple random selection of 20 specialists from each firm, consisting of auditors and

accountants from the (10) firms in Nigeria, was used to choose the sample size of (150) responses. A structured questionnaire with questions on a yes-or-no basis and a Likert scale with values of (SA=4; A=3; D=2; SD=1) was given to respondents to collect data from the chosen firms for this study.

4. Data presentation and analysis

By the established objectives, data gathered through questionnaire use from the sampled population of the 10 enterprises in Nigeria is analyzed and presented. 150 of the 200 administered questionnaires were returned and were determined to be useable, for a return rate of 75%. The goals of this study were accomplished through the analysis of the collected data. Both statistical and economic techniques are used in the study to offer a thorough background for the investigation. The statistical tools used are exploratory data analysis (respondent demographic statistics) and Chi-square. The goal of econometric analysis is to extend statistical analysis by performing an empirical analysis and obtaining estimated coefficients that are valid enough to test the desired hypothesis. Demographic statistics provide analytical information on the demographics of the respondents, whereas econometric analysis extends statistical analysis. SPSS 27.0 was used for the analysis.

4.1.1 Demographic Data on the Respondents.

The demographic data are shown below along with their gender, marital status, age, level of education, and career category.

Table 1: Demographic Profile of the Respondents (n = 150)

Characteristics	Frequency	Percentage
Gender		
Male	81	54%
Female	69	46%
Marital Status		
Single	65	43%
Married	85	57%
Age (Years)		
20 -29 years old	34	23%
30-39 years old	55	37%

40-49 years old	23	15%
50-59 years old	17	11%
60 years and above	21	14%
Educational Qualification		
B.sc/HND	71	47%
Masters	37	25%
PhD	19	13%
Others	23	15%
Career Category		
Practicing accountant	35	23%
Practicing auditors	30	20%
Senior staff	31	21%
Junior staff	54	36&

As shown in Table 1, for gender, 54% of the respondents are male, and 46% are female. Most of the respondents are married, which is 57%, and single are 43%. In terms of age group, the highest age group consists of "30 to 39years" which is 37% followed by "20 to 29 years" which 23%, "40 to 49 years" 15%, "50 to 59 years" 11% and 60 years and above is 14%%. For educational qualification, the majority of the respondents are bachelor's and master's degree holders, which are 47% and 25% respectively, while Ph.D. and Others recorded the lowest responses with 13% and 15% respectively. While looking into the Career category of the respondents, most are practicing accountants with a 23% response rate, followed by practicing auditors which is 20%, junior staff is 36% and senior staff is 21%.

4.2 Model Estimation and Interpretations

4.2.1 Hypothesis Testing 1

H_o1: Operating leverage has no significant effect on the financial performance of selected publicly listed Nigerian manufacturing firms

Table 2: Observed and expected frequency table

Observed Frequency				Expected Frequency			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4

Yes	115	104	98	121	135	135	135	135
No	35	46	52	29	14.2	14.2	14.2	14.2
Total	150	150	150	150				

Source: Field Work 2024.

Table 3: Chi-square analysis of hypothesis

	Observed Freq (O_f)	Expected Freq (E_f)	(O_f-E_f)	(O_f-E_f)^2	(O_f-E_f)^2/E_F
Yes	115	135	-20	400	2.963
No	35	14.2	20.8	432.64	30.467
Yes	104	135	-31	961	7.1185
No	46	14.2	31.8	1011.24	71.214
Yes	98	135	-37	1369	10.141
No	52	14.2	37.8	1428.84	100.62
Yes	121	135	-14	196	1.4519
No	150	14.2	14.8	219.04	15.425
(X^2)					67.0214

Source: Field Work 2024.

The Chi-Square calculated value was 67.0214, which is significantly greater than the significance criterion of 0.05 for the 9.488 table value. Consequently, the alternative hypothesis is accepted while the null hypothesis is rejected. Therefore, it is concluded that operating leverage has a significant effect on the financial performance of selected publicly listed Nigerian manufacturing firms (Given that X^2 =67.0214 table = 9.488, df = 4).

4.2.3 Hypothesis Testing 2

H_o2: Consumer leverage has no significant effect on the financial performance of selected publicly listed Nigerian manufacturing firms.

Table 4: Observed and expected frequency table

Likert Scale	Q1	Total
SA	89	

A	35	
UD	9	150
SD	10	
D	07	

Source: Field Work 2024.

Table 5: Chi-square analysis of hypothesis

Likert Scale	Observed Freq (O_f)	Expected Freq (E_f)	(O_f-E_f)	$(O_f-E_f)^2$	$(O_f-E_f)^2/E_F$
SA	89	58	31	961	16.569
A	35	36	-1	1	0.0278
UD	9	21.2	-12.2	148.84	7.0208
SD	10	17	-7	49	2.8824
D	07	17.8	-10.8	116.64	6.5528
Total (X^2)					33.0528

Source: Field Work 2024.

The Chi-Square calculated value of 33.0528, 2 degrees of freedom which is significantly higher than the 5.991 table value 0.05 level of significance. Consequently, the alternative hypothesis is accepted while the null is rejected. We conclude that consumer leverage statistically and significantly affects the financial performance of selected publicly listed Nigerian manufacturing firms (Given that. X^2 = 33.0528, table 5.991 df = 2).

4.3 Discussion of findings

The study examined the effect of financial leverage on the financial performance of selected publicly listed Nigerian manufacturing firms. The result indicated that operating leverage and consumer leverage significantly affect the financial performance of manufacturing firms in Nigeria. These results were obtained using the respondent's responses. The results of the Chi-square test (X^2) for both hypotheses are (67.0214 and 33.0528) with a probability value <0.05 accordingly. This is an indication of acceptance of the alternative hypothesis for both cases.

Therefore, the chi-square analysis conducted on the effect of operating leverage and consumer leverage on the financial performance of manufacturing firms yields

significant results. With a chi-square result of 67.0214 for operating leverage and 33.0528 for consumer leverage, both variables show a strong association with financial performance. The chi-square statistic quantifies the extent to which observed frequencies differ from expected frequencies under the assumption of independence between variables. In this case, the high chi-square values indicate that there is a significant deviation from independence, suggesting a meaningful relationship between leverage types and financial performance among manufacturing firms.

The probability values being less than 0.5 for both operating leverage and consumer leverage further underscore the significance of these relationships. A probability value (p-value) less than 0.5 indicates that the observed associations are unlikely to have occurred by random chance alone. Specifically, in this context, the probability values being less than 0.5 suggest that the associations between operating leverage, consumer leverage, and financial performance are statistically significant. This implies that both operating leverage (the degree to which a firm relies on fixed costs) and consumer leverage (the degree to which a firm relies on consumer borrowing) have an impact on the financial performance of manufacturing firms in a manner that is not merely coincidental.

Overall, these findings imply that managing operating and consumer leverage effectively is crucial for improving financial performance within the manufacturing sector. Firms may need to assess their levels of fixed costs and consumer borrowing carefully, as these factors appear to have a meaningful influence on financial outcomes. Moreover, these results can inform strategic decision-making processes within manufacturing firms, guiding them toward optimising their leverage structures to achieve better financial performance. Additionally, policymakers and industry stakeholders can use these insights to develop targeted interventions and regulatory measures aimed at promoting sustainable leverage practices that support the long-term financial health and stability of manufacturing firms.

5. Conclusion

In conclusion, our study has provided valuable insights into the effect of financial leverage on the financial performance of selected publicly listed Nigerian manufacturing firms, with a particular focus on both operating leverage and consumer leverage. Through empirical analysis and rigorous examination, we have

uncovered compelling evidence suggesting that both forms of leverage play significant roles in shaping the financial landscape of these firms. Firstly, our findings underscore the substantial impact of operating leverage on the financial performance of Nigerian manufacturing firms. Operating leverage, which stems from fixed operating costs, production levels, and sales volumes, influences firms' profitability and operational efficiency. Secondly, our study highlights the significant effect of consumer leverage on the financial performance of Nigerian manufacturing firms. Consumer leverage, characterised by the extent to which firms rely on consumer borrowing and spending to drive sales and revenue growth, plays a pivotal role in shaping firms' revenue streams and market demand dynamics. We concluded that financial leverage has a significant effect on the financial performance of selected publicly listed Nigerian manufacturing firms.

Recommendation

Based on the findings that both operating leverage and consumer leverage have significant effects on the financial performance of selected publicly listed Nigerian manufacturing firms, several recommendations emerge to guide firms, investors, policymakers, and other stakeholders in optimising leverage management strategies:

i. Nigerian manufacturing firms should adopt tailored leverage optimization strategies that take into account the differential impacts of operating and consumer leverage on financial performance. Firms with significant operating leverage should focus on enhancing operational efficiency, cost management, and production flexibility to mitigate the risks associated with fixed costs.

ii. Investors and financial analysts should be educated on the nuances of operating and consumer leverage and their implications for firm performance. Firms should enhance transparency and disclosure practices regarding leverage levels, debt maturity profiles, and risk management strategies to facilitate informed investment decisions. Firms affected by consumer leverage should prioritise market diversification, product innovation, and customer relationship management to mitigate revenue volatility and enhance market resilience.

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