

Effect of Cost Control Techniques on the Survival of Manufacturing Companies in Nigeria

Fatoki Jacob Obafemi, Ph.D.*; Adewale Taiwo, Ph.D.

Department of Management and Accounting, Faculty of Management and Social Sciences, Lead City University, Ibadan, Oyo State Nigeria.

*Corresponding Author's Email: femifatoki2000@hotmail.com

Abstract

The study evaluates the effects of cost control on the survival of the manufacturing companies in Nigeria. The study adopted finance cost, salaries and wages and cost of goods sold to determine the extent to which the various techniques of reducing cost have manifested in the industry. The study reviewed relevant theories such as “growth rate fitter theory”. Data on salaries and wages, finance cost and cost of goods sold were collected from the five selected manufacturing companies, and the data were analyzed using fixed effects model in panel regression to examine the influence of these costs on the growth or survival of the companies. Following the results of the analysis, findings revealed that the manufacturing companies have been able to control the cost incurred on salaries and wages and cost of borrowing known as finance cost or interest on loan. The cost of sales has been difficult to control. The study concludes that finance cost, salaries and wages cost and cost of sales have significant impact on the profitability of manufacturing companies in Nigeria. The study recommends that adequate management and alternative sourcing of raw materials should be pursued by manufacturing firms in Nigeria. This alternative can be achieved by encouraging large scale mechanized production of the primary raw materials and create a source of supply for foreign raw materials.

Keywords: Cost Control; Finance Cost; Cost of Sales; Profitability; Salaries Wages

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BACKGROUND

Any company's survival was wholly dependent on the control of product and service costs, quality, and performance. The primary goal of a firm's existence is to produce profit and then increase earnings in order for the business to remain relevant in the industry. Nonetheless, the greatest technique to increase profit is to expand the possibility of sales and create a smart cost-cutting strategy. As a result, the high cost of raw materials and general expenses has put a strain on the profitability of many businesses in recent years.

Profitability is critical to the performance of any firm in any corporate setting, which is why maximum profitability has been identified as a cognitive target against business failure and collapse in West Africa (Oni, 2018). It has been observed that an efficient firm performance can be attained if the company's financial structure is built in such a way that the cost of capital is kept to a bare minimum (Dare & Sola, 2017). However, in a competitive market where consumers are constantly seeking high-quality products or services at a reasonable price and shareholders are similarly wanting a significant rate of return on their investment, it is vital for the company's management to identify a good channel to please the shareholders in terms of returns on investment as well as the consumers by giving the best items.

Enyi (2017) defines cost as "the expenses incurred in the course of realizing revenue or implementing a project, which cost can be fixed, variable, or semi-variable in nature." Expense, according to Hanson (2014), is "the cost of producing a specific output of a commodity." It is the total of all payments made to factors of production involved in the manufacture of that commodity. According to the definitions given, cost can be defined as the expenses incurred on the materials used in the manufacturing process that must be regulated in order to survive.

According to Agara (2015), cost control is "a process by which targets are established against which the daily incidence of cost is compared to ensure that cost targets are not unduly exceeded." He went on to say that cost control entails all techniques of restraining managers' needless and unguarded expenditure of resources in order to minimize unneeded liability formation. According to Adeniyi (2017), cost control is the regulation of the cost of operating a firm and is concerned with keeping expenses below acceptable limits. He stated that these constraints are usually outlined in a formal operational plan or budget. He went on to say that if actual costs diverge from anticipated costs by a significant amount, cost-cutting measures will be required.

According to Alireza and Mahdi (2016), the performance of every organization is primarily defined by how well it manages its costs. This is due in part to the fact that in order to maximize profit, costs must be kept to a bare minimum. Cost cutting has become a critical technique for businesses to use in order to stay ahead of the rising competition in the business climate. In light of the aforementioned, this study will assess the potential effect and relationship of cost-cutting approaches in producing effective performance that will keep the organization afloat in a competitive climate.

Statement of the Problem

The literature is divided on whether increases in the cost of production, salaries and wages, and financial costs have a negative or beneficial impact on the survival of manufacturing enterprises. Despite the fact that various companies have adopted various cost-cutting strategies in recent years, such as downsizing staff to reduce the cost of salaries and wages or lowering the cost of doing business to maintain proficiency in the industry, the problem of low

survival of firms in the manufacturing sector persists. Godwin, Amos, and Sunday (2019), and Ben-Caleb, Otekunrin, Rasak, Adewara, Oladipo, and Eshua (2019) conducted studies that strongly advocated that cost reduction has a significant impact on the survival of manufacturing companies in Nigeria, whereas previous studies concluded that cost reduction is not a significant factor in determining the survival of companies in Nigeria. Previous research was found to have overlooked significant variables such as control cost of finance, salaries and wages, and cost of sales. Furthermore, the prior study's years of research limit the usefulness of their findings and recommendations on the subject. Against this backdrop, the current study examined the cost control techniques on the survival of manufacturing companies in Nigeria between 2018 and 2022.

Research Questions

The following questions have been formulated to answer the study's objectives:

- i. What is the relationship between finance cost control and profitability of manufacturing enterprises in Nigeria?
- ii. To what extent has salary and wage cost control influenced the profitability of Nigerian manufacturing firms?
- iii. What effect does cost-of-sales control have on the profitability of Nigerian manufacturing firms?

The Study's Objectives

The study's overarching goal is to assess the impact of cost-cutting measures on the survival of manufacturing companies in Nigeria, with specific goals to:

- i. Investigate the relationship between financing costs and profitability of the selected manufacturing enterprises in Nigeria;
- ii. Determine the influence of salaries and wages on the profitability of the selected Nigerian manufacturing enterprises; and to
- iii. Investigate the impact of cost of sales on the profitability of the selected Nigerian manufacturing firms.

Hypotheses Formulation

The following are the researcher's hypothesis for this study.

H₀₁: Finance costs have no significant relationship with profitability of Nigerian manufacturing firms.

H₀₂: Salaries and wages cost have no significant influence on the profitability of Nigerian manufacturing firms.

H₀₃: The cost of sales has no significant impact on the profitability of Nigerian manufacturing firms.

Significance of the Research

It is hoped that this work would add to the body of current information and compensate for the scarcity of scholarly papers on cost control and manufacturing performance in Nigeria. It will also aid firm management in their cost-cutting efforts, as well as management accounting students in their study. The study will also be useful to other academics who want to conduct comparable studies on the issue.

The Scope of the Study

This study examines the impact of cost controls on the survival of Nigerian manufacturing firms. The study chose five prominent Nigerian manufacturing companies that are publicly traded on the Nigerian Stock Exchange Group. To achieve the study's aims, data will be taken from their financial statements between 2018 and 2022. The period will be evaluated because of recent economic and financial issues that have afflicted the Nigerian economy.

REVIEW OF LITERATURE

Conceptual Review

The Cost-Control Concept

Cost control is described as the management of an organization's costs and expenses in order to decrease costs and maximize profits. According to Horngren, Forster, and Datar (2012), the phrase "cost control" refers to a manager's activities in short-run and long-run cost planning and management. They go on to say that planning and cost control are frequently intricately tied with revenue and profit planning. ICAN (2019) defines cost control as "all methods of controlling costs within a predetermined target."

In other words, cost control is the process of setting targets and collecting feedback information to ensure that actual performance matches the target and, if not, corrective action is taken. Cost control begins with firms assessing their costs and determining if such expenditures are acceptable and affordable. Then, if necessary, they can seek ways to reduce expenditures by cutting back, switching to a less expensive plan, or changing service providers. The cost-control procedure aims to manage expenses like phone, internet, and utility bills, as well as employee salaries and outside expert services. For example, the researcher discovered throughout this study that in order for a firm to be profitable, it must not only generate revenue, but also control all expenses related to the acquisition of goods or services. If costs are too high, profit margins will be too low, making it impossible for a company to compete. In the case of a public corporation, if costs are excessive, the company may discover that its share price is not enticing investors to purchase its shares. Anthony et al. (2015) defined cost control as a broad range of cost accounting procedures and management approaches with the purpose of enhancing business cost efficiency by reducing costs or, at the very least, limiting their pace of development. Businesses employ cost control strategies to monitor, assess, and ultimately improve the efficiency of specific aspects of their operations, such as departments, divisions, or product lines.

Cost Control Applications

According to Cooper et al. (2010), a complex corporation requires frequent operational information in order to plan for the future, control current actions, and analyze the previous

performance of managers, employees, and linked business segments. Management supervises the activities of its workers in the operation of the firm according to pre-established goals and objectives in order to be successful. Management's advice takes two forms of control: behavior management and supervision, and performance evaluation.

- i. Behavioral management is concerned with employees' attitudes and behaviors. While employee behavior ultimately influences success, behavioral management involves difficulties and assumptions that are not applicable to the accounting control function.
- ii. Performance evaluation compares the actual results of management recognizing the strengths it needs to maximize and the weaknesses it aims to correct the outcomes of employees' actions. Cost control refers to the practice of evaluating and correcting problems. Sikka (2013) believed that efficient organization and operations of cost control system involves the following steps: Setting up the targets, measurement of the actual, comparison of actual with targets to ascertain variances, analysis of variance to their causes and taking such corrective actions as are necessary to eliminate the variations.

The Benefits of Cost Control

According to Biggs (2015), effective cost control implementation in any organization is a collaborative effort of efficient management. As a result, the following benefits are apparent:

- i. Cost control provides relevant and system-oriented information for controlling the activities of a corporation operating in a competitive environment.
- ii. It provides a clear perspective of cost centers in a complex organization, allowing management to focus their attention on where it is most needed in order to properly apply the cost control strategy.
- iii. It eliminates inefficiency to promote a pleasant working atmosphere.
- iv. Insignificant costs are typically avoided.
- v. It assures that the financial statements are adequate and accurate at the end of the year.
- vi. It allows operational activities to be efficiently and constantly maintained.
- vii. It encourages and ensures checks and balances on organizational use of funds.

Cost Reduction Measures

1. **Kaizen Costing Methodology:** Kaizen is a Japanese term that was coined by Masaaki Imai (Rof, 2012). The notion is a combination of two Japanese words: KAI (Change) and ZEN (for Better) (Rof, 2012). Following that, Yashuhiro Monden of Japan developed Kaizen Costing as the Kaizen approach's costing counterpart (Industrial and Financial Systems, 2001). This idea alludes to the 'continuous improvement' process (Rof, 2012; Sani & Allahverdizadeh, 2012). The implementation of Kaizen Costing is based on the premise of producing tiny, gradual, but continual improvements in the production process at the lowest possible cost (Rof, 2012). According to Ellram (2000, as referenced in Modarress, Ansari & Lockwood, 2004), Kaizen Costing guarantees that products meet or surpass client needs for 'quality, functionality, and pricing' in order to maintain the product's competitiveness. According to Rof (2012), this can be

accomplished by sequentially eliminating all operations that would increase the product's production cost without correspondingly increasing its value.

2. **Budgetary Control:** Budgetary control refers to the process of comparing future spending plans to current performance in order to identify deviations. It refers to how managers use budgets effectively to control expenditures within a specific timeframe. Budgetary control ensures that the budgetary plans' objectives are met (Ashaolu & Nassar, 2017). Its systems embrace all aspects of corporate activity, including sales, production, administration, and finance, and serve as a standard against which others can be measured (Collier, 2015). It is a cost-cutting method that disengages difficulties by focusing on variations that act as a warning signal to managers. It keeps costs under control by restricting the permissible expenses for various department heads; thus, costs are not expected to surpass specific thresholds. The hallmark of budgetary control is maximizing profit through effective coordination of multiple capacities, legal management of capital and income consumptions, and making the best use of available assets (Preetabh, 2016).

Profitability

Effective management can boost the performance of any sector. Zhang (2010) defined firm performance as the firm's results or outcomes during a specific operating period. He concludes that financial ratios are used to assess financial performance. Ratios also supplement the traditional method of measuring financial success, which is based on financial statements (Saliha, 2011). The subjective measure of how successfully a firm can utilize assets from its primary method of operation to create revenues is referred to as an entity's financial performance. The most often used financial performance indicators are return on equity (ROE) and return on assets (ROA). The ROE measures accounting earnings over time as a percentage of shareholders' equity invested in currency units. It calculates the amount of money created by an organization's owners (equity holders) investment. The formula below best represents ROE. Return on Equity = Net Income Shareholder's Equity Return on Assets measures the rate at which assets employed by an organization are generating income. It informs management about the efficiency with which the entity's assets, whether financed by debt or equity, generate after-tax earnings. The formula for calculating ROA is shown below. Net Income on Total Assets x Return on Assets

Theoretical Framework

Theory of Going Concern

According to the going concern principle, a company will continue to operate actively in the foreseeable future and will not be obliged to halt operations or liquidate its assets (The Going Concern Principle, 2017). The theory of going concern refers to a company's ability to produce enough money to stay viable without falling bankrupt. The idea is based on the assumption that an organization would continue its operating activities continuously for a length of time adequate to pay its obligations and commitments when they become due. In other words, it is assumed that the company will not be compelled to liquidate or go out of business in the near future. Because it is anticipated that a company would not be forced to discontinue operations, management must establish provisions to limit anything that might contradict such an assumption. Rising costs are the most significant element affecting a corporate organization's going concern status, as unchecked costs might compel a corporation to cease operations.

Empirical Review

Lawal (2017) investigated the impact of cost control and cost reduction techniques on organizational performance, with a focus on budgetary management as a cost reduction and cost control tool. In his research, he discovered that cost containment has a favorable impact on organizational performance. He believes that the need of a cost-cutting strategy cannot be understated and recommends that businesses examine costs on a regular basis in order to control excess, ultimately eliminating expenditures. His research revealed that in order for a business to enjoy higher profit growth by delivering quality goods and services, cost must be controlled and reduced to an acceptable level.

Barbole, Yuraj and Santosh (2013) investigated the influence of cost control and cost-cutting methods on the manufacturing industry. According to research findings, cost control and cost reduction operations are necessary for firms to survive, expand, and succeed. They went on to discuss different cost management and cost reduction tools and approaches, as well as conduct a study of the changes in component costs that occur after implementing the various techniques. The study only considers material costs; it does not consider labor expenses or other overheads. As a result, the study proposes that manufacturing businesses utilize value engineering, budgetary management, and quality control to control and reduce costs in the manufacturing plant.

Omboga et al. (2016) discovered that financial control is critical for the industry's positive performance; this could be accomplished through effective cash control, cash processing, and budgeting; however, they recommended further research into the effect of human behavior on the application of financial control mechanisms.

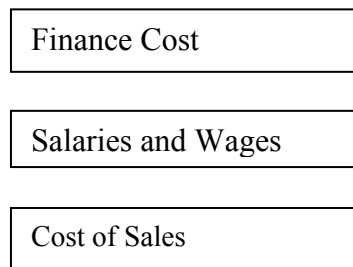
Etale and Bingila (2016) investigated the impact of inventory cost management as proxied by raw material costs, work in process costs, and finished goods costs on profitability as represented by a gross margin. According to the findings of the study, effective inventory cost management has a beneficial impact on profitability.

Prempeh (2015) stated that raw materials and inventory management had a significant effect on manufacturing firm profitability and proposed that other control variables be included in future research of these variables.

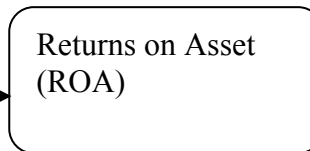
Olalekan and Tajudeen (2015) investigated the relevance of cost control, its varied strategies, and their impact on the survival of Nigerian enterprises in their study titled "Cost Control and Its Impact on the Survival of Nigeria Firms: A Case Study of Nigeria Bottling Company Plc." The study advised that Just-in-Time (JIT) approaches be used to meet production and sales requirements, as well as a good budgeting process and mechanisms for doing value analysis (incorporating value engineering) be put in place permanently to reduce costs. The study concluded that a company interested in carrying out cost control procedures must necessarily be concerned about cost reduction.

Conceptual Framework

Independent Variables



Dependent Variable



Source: Author's Idea, 2023

This study essentially has two variables. Cost-control techniques (independent variable) and manufacturing profitability (dependent variable) are involved. As a result, the independent variable is separated into sub variables. We have finance costs, salaries and wages costs, and cost of sales.

Measurement of the Dependent Variable

The dependent variable is manufacturing company profitability as assessed by returns on assets. This is critical since a return earned from a company's asset is a solid indicator of a company's profitability.

The Measurement of the Independent Variable

The independent variable that is separated into sub variables to measure cost control is the cost control technique. The sub variables are as follows:

- **Finance Cost:** According to Wikipedia, finance cost is the cost of borrowing money to create or purchase an asset, including interest and other costs. This will also help to explain the volatility and influence of finance costs in the dependent variable.
- **Salaries and Wage Cost:** The second independent variable used to calculate its contribution to the dependent variable. It will also help to explain its influence and contribution to the dependent variable.
- **Cost of Sales:** This refers to the direct costs attributable to an entity's production of goods or provision of services. The third independent variable, however, is used to determine its contribution to the dependent variable.

METHODS

Research Methods

An ex-post facto research design was used to attain the study's goal. Furthermore, the ex-post facto study strategy was used because the researcher has no intention of tampering with the data acquired from the original source.

Population

All of the items under investigation in any field of research form a universe or population from

which a sample can be drawn. This study's population consists of Nigerian manufacturing firms.

Sampling and Method of Sampling

A sample can be thought of as a subset of the population. The probability sampling technique was employed in the study to pick finance costs, salaries and wages, and cost of sales of five selected manufacturing enterprises in Nigeria that comprise the study's sample. The sample size spans the years 2018 to 2022 for the five manufacturing firms chosen.

Data Collection Sources and Instrument

The study assesses the impact of cost-control measures on the survival of Nigerian manufacturing firms. The study relied on secondary data acquired from four Nigerian manufacturing businesses (Cadbury Nigeria PLC, Lafarge Cement Wapco PLC, Flour Mills of Nigeria PLC, International Breweries, and Nestle PLC) on return on asset, finance cost, salaries and labor cost, and cost of sales. The data for this study is a time series from 2018 to 2022.

Data Analysis

Panel Data Analysis Method Multiple regression was used to analyze the study's model. Descriptive statistics were employed to describe the data's nature, while correlation analysis was utilized to determine the amount and magnitude of correlations between the variables. Regression was used to draw conclusions about their impact, direction, and significance level on the dependent variable financial performance based on the results. Eview 09 was utilized as a data analysis tool. Robustness tests such as multicollinearity, normalcy, heteroscedasticity, hausman specification, and lang range multiplier were performed. This allows the researcher to determine the validity of the study's results. The skewness and kurtosis were used to perform a normality test. The tolerance value and the variance inflation factor (VIF) were used in a multicollinearity test to look for correlation between the study's independent variables. The Breusch-Pagan test was used to determine the existence or lack of heterogeneity.

Model Specification

The researcher used multiple regression in carrying out the analysis. The analytical model used in analyzing the interrelation of the predictor variables on the response variable was formulated as follows:

$$Y=f(X_n)$$

$$Y=f(X_1, X_2, X_3, \dots, X_n)$$

$$ROA=f(FNC, SWC, CGS)$$

$$Y= \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

$$Y= \alpha + \beta_1 FNC_1 + \beta_2 SWC_2 + \beta_3 CGS_3 + e$$

Where:

ROA= Return on Assets

FNC= Finance Cost

SWC = Salaries and Wages

CGS= Cost of Sales

β_0 = Constant Term

β_1 - β_3 =Coefficients of explanatory variables

e =Error Term

A Priori Expectation

This study's likely finding is that finance costs, salaries and labor costs, and sales costs are all projected to have a negative marginal contribution to manufacturing profitability. As a result, they are costs that are removed from the company's revenue. Mathematically stated: $b_1 < 0$, $b_2 < 0$, $b_3 < 0$

RESULTS AND DISCUSSION OF FINDINGS

This section shows the nature of data collected, the various tests conducted to validate the results of the regression analysis. The outcome of the analyzed data and its interpretation also explains the findings of the study.

Analysis of Data

Table 1: Descriptive Statistics

	ROA	FNC	SWC	CGS
Mean	12.36890	13216333	6500507.	1.56E+08
Median	7.810200	5195659.	5684845.	1.43E+08
Maximum	42.19070	43216500	12536952	4.74E+08
Minimum	-5.746500	0.000000	1783535.	11587817
Std. Dev.	12.69912	14646254	3316776.	1.44E+08
Skewness	1.123383	0.826826	0.459084	1.078493
Kurtosis	3.264812	2.320931	1.997328	3.210948
Jarque-Bera	5.331337	3.328851	1.925400	4.892798
Probability	0.069553	0.189299	0.381860	0.086605
Sum	309.2226	3.30E+08	1.63E+08	3.91E+09
Sum Sq. Dev.	3870.421	5.15E+15	2.64E+14	5.01E+17
Observations	25	25	25	25

Source: Author's Analysis (E-view 9)

The descriptive statistics shown in the table above depict the properties of the variables.

Mean: This is a measure of the series' average value. As a result, the average value of return on assets is 12.36890. The average financial cost is 13216333, whereas the average salary and wages are 6500507. As a result, the average cost of sales is 1.56.

Maximum and Minimum: The maximum and minimum values of all the variables under consideration. The greatest and minimum value of return on assets, on the other hand, are 42.19070 and -5.746500, respectively. Finance cost has the maximum value of 43216500 and the minimum value of 0.000000. Ultimately, the maximum and minimum value of salaries and wages is 12536952 and 1783535 while cost of sales has 4.74 and 11587817 as its maximum and minimum value respectively.

Jarque-Bera: This is a normal distribution test statistic. The test's null hypothesis is that the series is regularly distributed. As a result, if the estimated probability value for the test is greater than 0.05, the null hypothesis is not rejected. Otherwise, we will reject it. All of the series in the descriptive statistic table are normally distributed. As a result, the series' probability value is greater than 5% (0.05), the level of significance.

Table 2: Correlation

	ROA	FNC	SWC	CGS
ROA	1.000000	-0.215552	0.494838	-0.055768
FNC	-0.215552	1.000000	0.224010	0.544094
SWC	0.494838	0.224010	1.000000	0.180011
CGS	-0.055768	0.544094	0.180011	1.000000

Source: Author's Analysis (E-view 9)

The table above depicts the relationship dimension between independent variables and dependent variables (ROA). According to the analysis, the correlation coefficient between finance cost and return on asset is -0.215552, indicating a negative association between the two variables. There is also a favorable relationship between return on asset and salary and wages. Furthermore, the cost of sales has no link with the return on assets.

Table 3: Heteroscedasticity Test

Breusch-pagan LM is used to test for the presence of heteroscedasticity.

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	19.25907	10	0.0371
Pesaran scaled LM	0.952356		0.3409
Bias-corrected scaled LM	0.327356		0.7434
Pesaran CD	-1.645878		0.0998

The result of the test revealed that there was no presence of heteroscedasticity so since the p-value of the Breusch-pagan LM test, 0.0371 is less than the level of significance.

The Hausman specification test was used to determine which model was more effective between the fixed effect and random effects models and which model to report as the outcome of regression analysis. However, the fixed effects test has been found to be more effective in reporting. This is demonstrated by the following test result:

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section and period fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	23.934512	(4,13)	0.0000
Cross-section Chi-square	53.099810	4	0.0000
Period F	1.633255	(4,13)	0.2250
Period Chi-square	10.178923	4	0.0375
Cross-Section/Period F	13.724822	(8,13)	0.0000
Cross-Section/Period Chi-square	56.139902	8	0.0000

Source: Author's Analysis (E-view 9)

The preceding test was carried out to see whether the fixed effects model is suitable for reporting as the output of Ordinary Least Squares (OLS). Rejection of the null hypothesis (where the statistic is statistically significant) implies use of the fixed effects model, whereas non-rejection implies use of the random effects model. The failure of the null hypothesis also shows that the fixed effects model captures the associated particular effects better. The p-value, or degree of significance, is less than 0.05 based on the test results.

As a result, the effects are statistically significant at the 5% level. As a result, the fixed effects model is more effective at reporting than the random effects test. The correlated random effects-hausman test, on the other hand, was equally conducted. In the case of the random effects model, the effects are statistically insignificant.

Table 5: Regression

Dependent Variable: ROA				
Method: Panel Least Squares				
Sample: 2015 2023				
Periods included: 5				
Cross-sections included: 5				
Total panel (balanced) observations: 25				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	26.08497	4.546417	5.737480	0.0001
FNC	-1.85E-07	1.42E-07	-1.296602	0.2173
SWC	-1.99E-06	5.55E-07	-3.579900	0.0034
CGS	1.04E-08	3.13E-08	0.332824	0.7446
Effects Specification				
Cross-section fixed (dummy variables)				
Period fixed (dummy variables)				
R-squared	0.932053	Mean dependent var	12.36890	
Adjusted R-squared	0.874560	S.D. dependent var	12.69912	

S.E. of regression	4.497715	Akaike info criterion	6.151090
Sum squared resid	262.9827	Schwarz criterion	6.736150
Log likelihood	-64.88862	Hannan-Quinn criter.	6.313361
F-statistic	16.21147	Durbin-Watson stat	1.539567
Prob(F-statistic)	0.000008		

Source: Author's Analysis (E-view 9)

Coefficient of Variables: The calculated coefficients are shown in the "coefficient" column. The conventional Ordinary Least Square formula is used to get the least square regression coefficients. The coefficient measures the marginal contribution of each independent variable to the dependent variable in the simple linear models addressed in this study. A positive (negative) coefficient on an independent variable that adds to the value of the dependent variable indicates that a rise (decrease) in that independent variable would lead to an increase (decrease) in the dependent variable. Export and oil earnings to GDP are two examples. Otherwise, an independent variable that is a derivation from the dependent variable but has a negative (positive) coefficient indicates that a reduction (increase) in that independent variable would result in a drop (increase) in the dependent variable. Inflation and interest rate to GDP are two examples.

The coefficient of each independent variable from the preceding table is inserted in the model as follows:

$$\text{ROA} = 26.08497 - 1.85\text{E-}07\text{FNC} - 1.99\text{E-}06\text{SWC} + 1.04\text{E-}08 \text{ CGS}$$

If all other variables remain constant, the value of the constant term is 26.08497, implying that the return on asset will increase at a rate of 26.08 units. The finance cost coefficient is -0.000000185, which means that for every 1 million decrease in finance cost, there will be a 0.185 unit rise in return on assets. The coefficient of salaries and wages is -0.00000199, which means that for every 1 million drop in salaries and wages, the return on asset will increase by 1.99 units. The coefficient of sales cost is 0.0000000104, which means that for every million dollars rise in sales cost, there will be a 0.0104 unit loss in return on asset.

R-Squared: The R-squared value indicates that the model's explanatory variables (FNC, SWC, and CGS) account for approximately 93.2 percent of the variation in the dependent variable (ROA). As a result, the model's explanatory power is strong, implying that the included variables are good predictors of return on asset.

Adjusted R-squared: The high proportion of R-squared can be explained further by adjusted R². Because the adjusted R², 87.5 percent is quite close to R-squared, it means that the model has fewer penalties for irrelevant variables. In other words, the proportion of adjusted R² indicates that relevant variables were used to determine the significance of independent factors in the dependent variable.

F-statistic: The F-statistic demonstrates the model's overall goodness of fit as well as the joint importance of independent variables on the dependent variable. The F-test can be used to verify this. If the F-statistic p-value is less than 0.05, we reject the null hypothesis H₀ and accept the alternative hypothesis H₁. If the p-value is larger than 0.05, the null hypothesis is accepted and the alternative hypothesis is rejected. The F-statistics from the above results is 0.000008, which is less than the 0.05 level of significance. As a result, the null hypothesis (H₀) is rejected, and

the alternative hypothesis (H1) is accepted. The presence of a significant F-statistic indicates that the model's overall goodness of fit is satisfactory.

T-test: This demonstrates the importance of each independent variable on the dependent variable as well as the relationship between the independent variables and the dependent variable. The p-value of the t-test can be used to determine significance. If the p-value of the t-test is less than or equal to 0.05, the null hypothesis is rejected and the alternative hypothesis is accepted. Otherwise, the opposite will occur. However, a positive t-test score suggests a positive relationship, whereas a negative value shows a negative relationship.

The p-value of finance cost, 0.2173, is more than the level of significance, based on the given data. This demonstrates that finance cost (FNC) is statistically negligible and has a negative connection with asset return.

The salary and wage p-value of 0.0034 is less below the level of significance. This demonstrates that although salaries and wages (SWC) are statistically significant, they have a negative connection with return on assets.

The cost of sales p-value of 0.7446 is more than the level of significance. This demonstrates that cost of sales (CGS) has a positive association with return on asset while being statistically insignificant.

Test of Hypothesis

H0: Null hypothesis

The following decision rule is specified in order to test the previously stated hypothesis.

Decision rule is to reject the null hypothesis if the P-value is ≤ 0.05 level of significance and if otherwise, accept the null hypothesis.

Hypothesis One

The p-value of finance cost (FNC) is 0.2173 and the level of significance is 0.05. Based on this result ($0.2173 > 0.05$), as per the decision rule, null hypothesis will not be rejected. We therefore conclude that finance cost has no significant impact on the profitability of manufacturing companies in Nigeria.

Hypothesis Two

The p-value of salaries and wages (SWC) is 0.0034, with a level of significance of 0.05. According to the decision rule, the null hypothesis will be rejected based on this result ($0.0034 < 0.05$). As a result, we find that salaries and wages have a considerable impact on the profitability of Nigerian manufacturing firms.

Hypothesis Three

The cost of sales (CGS) p-value is 0.7446, and the level of significance is 0.05. According to the decision rule, the null hypothesis will not be rejected based on this result ($0.7446 > 0.05$). As a result, we conclude that cost of sales has no substantial impact on the profitability of Nigerian manufacturing firms.

DISCUSSION OF RESULTS

The study sought to assess the influence of cost-control measures on the survival of Nigerian manufacturing firms. The effects of the strategies were investigated using the principal costs incurred by manufacturing enterprises. Taking into account the five selected manufacturing enterprises and the years under consideration, the study's findings demonstrated that finance costs and salaries and wages were able to be controlled through the employment of various cost-controlling measures. This is supported by Lawal's (2017) study, which revealed that cost control had a good impact on organizational performance and also saw the necessity of cost reduction schemes as something that cannot be emphasized.

Finance costs, often known as interest on borrowing, have been reduced over time, resulting in a consistent improvement in the companies' return on assets. The industries may have negotiated with loan providers to reduce borrowing interest rates. The data acquired from the selected manufacturing companies clearly state the evidence. The study, however, indicated that the cost of sales, also known as the cost of goods sold, was unable to be controlled for the time period under consideration. The statistics acquired from the five selected manufacturing companies show that the cost of sales has been increasing over time.

The uncontrolled cost of sales could be attributed to the fact that every manufacturing company, particularly those under consideration in the study, continues to expand their tentacles even into rural areas, resulting in increased revenue but not as much as expected while costs rise in the same vein.

CONCLUSION AND RECOMMENDATIONS

Summary

The study examines the influence of cost control on the survival of Nigerian manufacturing firms. The study used finance costs, salaries and wages, and cost of goods sold to measure the extent to which various cost-cutting techniques were used in the industry. Alchian's (1950) "growth rate fitter theory" was reviewed in the study. He said that company profit represents fitness, and that profitable enterprises develop and survive in the market while other firms quit owing to bad performance.

Furthermore, the study evaluated neoclassical growth theory, which indicated that there are three elements that have a substantial influence on the firm's profit maximization ability, hence impeding its potential to grow. However, data on salaries and wages, financing expenses, and cost of goods sold were obtained from the five selected manufacturing companies and analyzed using a fixed effects model in panel regression to determine the impact of these costs on the companies' growth or survival. According to the findings of the investigation, manufacturing organizations have been able to control the cost of salaries and wages as well as the cost of borrowing known as finance cost or interest on loan. The cost of sales has been difficult to be controlled.

Conclusion

This study was conducted primarily to determine whether or not cost-control measures used in manufacturing organizations were beneficial. The effectiveness of the strategies may be traced back to cost reduction and increased profitability in Nigerian manufacturing firms. According to the findings of this study, cost control has a significant impact on the performance of

manufacturing companies, and that element of cost, such as salaries and wages and borrowing cost behavior, could be strategically controlled with measures such as prompt payment of employees' salaries and wages and employee incentives that will foster the relationship between management and workers. The absence of behavioral control, whether through motivation, incentives, or other means, will reduce the effect of cost control on profit growth; however, if management is able to focus on enlightening and motivating workers on the true purpose of cost control, greater profitability is assured. Finance costs and cost of goods sold are insignificant, but cost of sales has a positive link with return on asset.

Recommendations

Given the outcomes of this study, it is recommended that the company continue to use the present approaches for cost management and look for ways to improve on these techniques. However, in addition to the different cost-control measures, the following are advised:

- i. Manufacturing enterprises in Nigeria should explore adequate management and alternate raw material sourcing. This alternative can be realized by fostering large-scale mechanized primary raw material production and creating a source of supply for foreign raw materials.
- ii. Cost control should be implemented in all departments, particularly the production department, to ensure that finished goods units are properly accounted for. This would also have an impact on the costs spent after production.
- iii. Manufacturing company's management should adhere to prompt payment of employees' salaries and wages. According to empirical findings, this payment will build greater and mutual industrial harmony between management and labor unions because entities try to succeed in the face of opposition.
- iv. When conditions change, the budget should be changed rather than remaining static. This indicates that there should be an attainable goal, not one that is beyond the capabilities of workers given the resources at their disposal.

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