Effect of Cost Control on Corporate Performance: Evidence from Selected Listed Brewery Firms in Nigeria

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Abstract
The main objective of this study is to determine the effect of cost control on corporate performance of listed brewery firms in Nigeria for the period of 2011 to 2021. To achieve this objective, material cost (MATC), labour cost (LABC) and overhead cost (OHDC) were used as proxy for cost control while the return on assets (ROA) was used as the proxy for the dependent variable, corporate performance. The study adopted ex post facto design and the data was obtained from the sampled firms' annual reports and World Bank annual data official publications. The study was anchored on the Kaizen Costing Theory. The ordinary least square (OLS) regression technique was employed to analyze the data and test the hypotheses formulated at 5% level of significance. The findings revealed that cost control proxies such as material cost and overheads have positive and significant impact on corporate performance of brewery firms in Nigeria while labour cost has positive and insignificant impact on corporate performance of brewery firms in Nigeria. The study concluded that the elements of cost control used in the study such as material cost and overheads have positive and significant impact on corporate performance while labour cost has positive and insignificant impact on corporate performance of brewery firms in Nigeria. The study therefore recommends among other things that the management of brewery firms in Nigeria should embark on cost control strategies that emphasized on material cost, labour cost and overheads reduction in order to improve on their corporate performance indices.

Key words: Cost Control; Corporate Performance; Brewery Firms; Material Cost; Labour Cost

1. INTRODUCTION

A stable, viable and successful Nigeria will be dependent upon a steady growing manufacturing sector that will be capable of rebuilding and recreating the country's competitive advantages in the presence of fast developing technologies and globalized markets. The manufacturing sector creates one of the greatest opportunities for the development and transformation of the Nigerian economy from a monolithic economy to a multi-product one (Uguru, 2015). As a hub in the wheel of growth, a boost in production process in the manufacturing sector is a source of hope for a sufficient availability of products manufactured locally that would preserve and increase the revenue derivable from foreign exchange.

Cost control is simply explained as the recognition and implementation of some cost accounting system in such a way and manner that the increasing cost of production and operation could be control. Cost control is then defined by Adhikari (2017) as an exercise to reduce cost as much as possible to predetermined level. However, Oluwayemisi, Elkanah, Ademola, Mathew & Mamidu (2022) is of the opinion that the main function of cost control is to identify and explain variances in terms of costs and revenues. Akayisenga & Mulyungi (2018) explained cost control as the management's effort to influence the actions of individuals who are responsible for performing tasks, incurring costs, and generating revenues, by reducing expenses at acquiring the best for the business at the same time. It is a continuous process that begins with the annual budget and as the fiscal year progresses, management makes comparison of actual results with the projected in the budget and then includes into the subsequent plan, the feedbacks from its evaluation of current operations.

Cost of production may be increase as various production levels are targeted and the necessity for being cost effective will exists due to the fact that the set standards for production and actual production will definitely vary in most cases which can only be ameliorated or eliminated by employing effective cost control strategies (Omah & Horsfall, 2021). Sikka (2003) observed that cost control system is made up of methods and procedures that assist to regulate the operational cost of a firm and ensure that a certain level of cost is not exceeded. Cost control is established through standards setting and performance maintenance with reference to the standard set.

The Nigerian brewery sector is a sub-sector of the food and beverages industry in Nigeria. This sector continues to thrive, despite the fact that the global consumption declines as a result of the recent global economic crisis and the Nigeria economic recession as well as increasing health awareness of the consumers (Uguru & Ituma, 2022). The major operations of brewery firms comprise the production, packaging and sales of alcoholic and malt beverages (Adekoya, 2016). From the report of the Deutsche Bank Market Research, it has been certified that Nigeria is Africa's largest alcohol consumer, accounting for 36% of Africa's formal alcohol market. The sector is now competing with brewing multinationals over the huge consumer market in Nigeria with a dense population making up the largest in Africa and an increasing middle class with a good number of drinking - age consumers, beer demand and intense competition (GTI Research, 2012). The major multinational players in the Nigeria brewery industry are Heineken Brouwerijen BV, with 71% share of the market through its subsidiary, Nigerian Breweries; Diageo Beverage Company with a 27% market share through its stake in Guinness Nigeria; while SABMiller, a South African brewery multinational, with its acquisition of Pabod Breweries in 2008 and International Breweries in 2012 (Uguru & Ituma, 2022).

In Nigeria today, the cost of manufactured products has been too expensive beyond the reach of common Nigerians. The exchange value of goods and services are gradually rising on daily basis. In attempt to maximize profit, which is the major objective of a business enterprise, the management of manufacturing firms resorted to the deployment of low quality materials for production in order to curtail cost of production (Mutya, 2018). The brewery firms sought for their raw materials from outside Nigeria and with the high exchange rate of naira to dollar as at present, the desired rate of return cannot be achieved. The high exchange rate during the purchase of raw materials usually erodes a great proportion of the profit element in the brewery firms. It is not disputable that an increase in the prices of raw materials and components leave the operators in the brewery firms with no other option than to hike the price of their products. This is necessary bearing in mind the aim of a firm is to make profit from the exchange of their products with the consumers. In pursuit of this acceptable level of profitability, the management will hike the price of their products to cover the incremental cost incurred in the acquisition of materials, servicing labour and offsetting al overhead cost (Nwankwo, 2022).

Evidence from the previous related studies in Nigeria proved that the extant literature has not found a clear cut impact of cost control on corporate performance of brewery firms in Nigeria. Consequently, it has created more need for further studies ascertain the impact of cost control , using material cost, labour cost and overheads as proxies, on corporate performance, using return on asset as a proxy, of listed brewery firms in Nigeria. Therefore, this study sought to ascertain the effect of cost control on the corporate performance of brewery firms in Nigeria.

Statement of Research Hypotheses
The research hypotheses were formulated in null as follows:

$H0_1$ – Material cost has no significant impact on corporate performance of brewery firms in Nigeria.

$H0_2$ – There is no significant impact of labour cost on corporate performance of brewery firms in Nigeria.

$H0_3$ – Overheads has no significant impact on corporate performance of brewery firms in Nigeria.

2. REVIEW OF RELATED LITERATURE
2.1 Cost Control in Brewery Firms
Cost is the sacrifice of economic resources as measured in units of money that have occurred or likely to occur to achieve a particular goal. Cost can also be defined as an economic sacrifice to obtain goods or services in the useful life of goods or services enjoyed in more than one year period. Control is the processes that are employed in an organization to ensure that actual performance is consonance with the established plan and objectives.

Cost control can be said to be the process of keeping expenses at the minimal, anticipated and acceptable level using substantial budgetary and budgetary management systems (Oluwayemisi, Elkanah, Ademola, Mathew & Mamidu (2022). The Chartered Institute of Management Accounting (CIMA) in Siyanbola & Raji (2013) defined cost control "as the guidance and regulation by executive action of the costs of operating an undertaking, particularly where such action is guided by cost accounting". Cost control in Lawyers(2014) is a complete set of accounting processes and management strategies that enhance business efficiency by reducing expenses or, at the very least, decreasing the growth in costs. Akenbor & Agwor (2015) opined that the implementation of cost management strategies should result in a reduction in non-value

added expenditures. Cost control can also be described as the efforts made by management to influence people in charge of the duties, costs, and income generation of a firm.

Cost control is not a specific programme but a routine activity that is continuously carried out such as responsibility accounting, budgeting, standard costing, budgetary control, marginal costing and others (Adhikari, 2017). Cost control also comprises of cost reduction which amounts to the efforts business managers make to monitor, evaluate and trim expenditures (Akayisenga & Mulyungi, 2018). Business entities use cost control strategies to monitor, evaluate and mainly improve the efficiency of specific aspects of operations like units, departments, divisions, branches or product lines. In marginal costing, the identification of the unit cost, the measurement of delegated performance, and the modification of performance are all included in the cost control component. The essence is to make sure that effectiveness and efficiency are both achieved in the process of cost control (Akeem, 2017).

2.2 Corporate Performance in Brewery Firms

Scholars have not come up with a generally acceptable definition of corporate performance. Some firms are using wrong measures many of which they incorrectly regard as key performance indicators (David, 2011; Omah & Horsfall, 2021). Daft (1995) defined corporate performance as the evaluation of achievement of the firm target. Corporate performance was also explained by Reed, Lemak and Mero (2000) as firm's ability to create acceptable outcomes and actions. The major corporate performance indicators in a firm are sales growth, profitability, market share, liquidity, capacity utilization, financial structure, investment – shareholder ratio, and number of employees (Uguru & Ituma, 2022; Egbide, 2009; Damilola, 2007). Profitability is usually paramount in the structure and development of firm because of its major role as a determinant of the performance and survival of a firm (Bhutta & Hassan, 2013). Simply put, corporate performance is mainly described in relation to output such as quantified objectives or profitability.

Profit is confronted with none specificity in terms of definition and thus poses decisional challenges to scholars when selecting the appropriate variant to proxy profitability. Profit is always proxied with different quantifiable terms which include gross profit, net profit, profit after tax, profit before tax, return on assets, return on equity, return on capital employed, profit per share, profit per share and so on (Bhutta & Hassan, 2013; Kaguri, 2013). Whichever term that is used; profitability is always at the fore front in the scale of preference of objectives of a firm. Profit is a tool for efficient resource allocation because it is the best means for measuring the performance of enterprises especially under competitive market conditions (Pandey, 2005; Uguru, 2015).

Corporate performance has been a focal phenomenon in firm and business studies even though it has been multidimensional and hydra-headed. Corporate performance can be described as the firm's ability to create acceptable outcomes and actions (Reed, Lemak & Mero, 2000). It has been interpreted with different variables by different authors like return on assets, return on equity, survival, return on investment, net profit margin, gross profit margin, sales growth, number of employees, happiness, reputation, market share, return on capital employed, and so on (Uguru & Ituma, 2022; Kisengo & Kombo, 2014; Bhutta & Hassan, 2013; Damilola, 2007; Raheman & Nasr, 2007; Demirguc-Kunt & Huizinga, 2004; Foley & Green, 1989).

2.3 Material Cost

Manufacturing firms like brewery firms purchase materials which are eventually converted to finished products. These materials purchased are exchanged through any medium that must be

measured in monetary terms called cost. Costing systems record the cost of resources acquired and track their subsequent usage. Cost is defined by Horngren, Foster and Datar (2001) as a resource sacrificed or forgone to achieve a specific objective. It is always as the monetary amount which must be paid to buy goods and services. Material cost on the other hand is the acquisition cost of all materials that later become the component of object and may be traced to the cost object with ease (Horngren, Foster and Datar, 2001; Adeniji, 2004). Material cost is the cost of basic substance in its natural, modified, or semi-processed state, used as an input to a production process for further processing.

2.4 Labour Cost
Labour cost is the next important cost of production after material cost. Labour cost is all the cost incurred in the compensation of all manufacturing labour for the use of their skills in the conversion process of the materials or for the use of the human resources in other operations of the firm. Examples include salaries, wages, fringe benefits and other remuneration paid to staff (permanent or casual) in the course of the operations of the brewery activities.

The corporate performance and survival of a firm largely depends on the proper harnessing of the manpower or human resources, which invariably needs the necessary cost accounting and control. Yushang, et al. (2020) reiterated that cost of labour will enhance organizational performance but could be dangerous if not prudently incurred because it can erode a greater proportion of the overall profit component of the organization. Therefore, the control of labour cost according to Figar & Ivanovic (2015) is a very important issue from the perspective of management. Labour cost control then means the control of cost per unit. Hence labour cost reduction means the same thing as lower wage obtaining greater output or for the higher wage obtaining more output but does not in any way means wage-cut (Siyanbola & Raji, 2013; Nwankwo, 2022).

2.5 Overheads
Overheads otherwise known as indirect expenses are those costs that are considered part of the cost of goods or services but that cannot be traced to that cost object with ease. Examples are insurance, electricity bills, rent, depreciation of plant and machineries, repair and maintenance of factory equipment, and so on. Overheads can be reduced through an effective and efficient cost absorption, allocation and apportionment into cost unit. Overheads are sometimes sub-divided into administrative expenses and distribution & selling overheads. Brewery firms incur overheads in order to perform basic operations, the day to day activities, but it is not directly traced to the products or services and are not usually included in gross margins (Tuovila, 2021).

2.6 Empirical Review

Akpanabia & Ozims (2021) examined cost control policy and productivity of manufacturing organization. Primary data was used through the administration of questionnaire to the staff of the organization. The Analysis of Variance (ANOVA) was employed to analyze the data and the Statistical Package for Social Science (SPSS) 20.0 was used to test the hypotheses. The result indicates that there is a significant relationship between budgeting and quantity of production and that there is a significant relationship between standard costing and quality of production. It then recommends that firms should establish and maintain an effective system of cost control policy.

Omah & Horsfall (2021) examined the relationship between cost control practices and corporate performance of manufacturing companies in River State. The study used literature review analysis, which indicates that cost accounting methods and management techniques have a goal of improving business cost efficiency by reducing costs. Also, cost control is of paramount importance in every enterprise and the negligence of it will negatively affect the earnings at any given period. Budget and standard costing were considered as the basic tools for achieving effective Cost Control. Finally, the reviews showed that cost control has a positive impact on corporate performance and element of cost, such as materials, labour, and overhead costs.

Yushang, *et al*. (2020) investigated the effect of cost management on the financial performance of manufacturing firms in Zimbabwe. The study adopted a descriptive research design also employed panel data spanning four years (2014-2018), which was collected from the financial statements of a selected manufacturing firm. The pooled regression analysis was used for the data analysis. The finding revealed that cost of inventories has insignificant positive effect on return on equity.

Fadare & Adegbie (2020) examined the effect of Cost Management on financial performance of quoted Consumer goods firms in Nigeria. Using 27 consumer goods firms listed on the Nigeria Stock Exchange, a sample frame of 10 firms was selected for a period of 10 years spanning from 2009 to 2018. The study adopted descriptive and inferential statistics in the data analysis. The findings showed a joint insignificant effect of cost management on net profit margin. The study then recommended adequate management and quality cost ascertainment and control.

Godwin, Amos & Sunday (2019) investigated the effect of cost management on the profitability of selected Nigerian manufacturing companies. 78 manufacturing firms listed on the Nigeria Stock Exchange were used as the population and descriptive and inferential statistics (regression) was used to analyze the data so collected. The finding shows that the cost of raw materials and profit before taxes for manufacturing firms in Nigeria are significant and negatively linked. The study revealed that cost management has a significant influence on the profitability of manufacturing companies in Nigeria for the period under study.

Mamidu & Akinola (2019) studied the effect of cost management on performance of manufacturing companies in Nigeria. The study used eclectic theories of portfolio theory, resource based view theory and efficient structure theory. Data used was secondary data obtained from annual reports of firms and tested using the Ordinary Least Square Linear Regression model. The result proved that shareholders' funds positively relate to profitability and that the total asset also positively relate to profitability. The study recommended that policy makers in firms should be focus on formulating cost management policies that will not negatively impact on financial performance of the company.

Nelson, George, Muriithi & Isaac (2014) investigated the influence of cost reduction techniques on the performance of tea factories in Embu, Kenya. Primary data sourced through structured questionnaire administered to the respondents were evaluated using frequencies and percentages. The investigation revealed that the data obtained statistically showed that comparing equal periods before and after 2006, the quantity of tea processed has no relationship with the cost reduction techniques.

Oyerogba, Olaleye & Solomon (2014) investigated the relationship between cost management practices and firm's performance in the manufacturing firms. The study used secondary data from

40 manufacturing firms listed on the Nigeria Stock Exchange during the period of 10 years (2003 – 2012). The data collected was analyzed using t-statistic. The cost management (independent variables) used are direct material cost, direct labour cost, production overhead cost and administrative overhead cost while operating profit was used as a proxy for the dependent variable (firm's performance). The findings show that there is a positive significant relationship between cost management practices and firm's performance in the manufacturing firm. The study then recommends that a cost reduction strategy with focus on overhead cost should be looked into in order to achieve the profit maximization and wealth creation objective of firms.

Siyanbola & Raji (2013) examined budget as the basic tool for achieving effective cost control in manufacturing firms using West African Portland Cement Plc (WAPCO) as the case study. Secondary data was employed and Pearson correlation model was used in analyzing the collected data. The hypotheses formulated were tested and the result confirmed positive impact of cost control on the manufacturing industries' profitability.

Okwo and Ugwunta (2012) studied the influence of firm profitability on the company's input costs. The annual reports of some sampled breweries from 1999 to 2010 were used to generate the needed data for analysis. Ordinary Least Squares (OLS) was used to analyze the data and the outcome showed that the focus variable was statistically positive and has an impact on the profitability of breweries in Nigeria. It then recommended that the Nigerian brewers should improve their profitability by reducing their input costs.

2.7 Theoretical Framework

This study adopted the Kaizen Costing Theory as the underpinning theory to guide the study. Kaizen costing theory was first propounded by Yashuhiro Monden from Japan as an equivalent of kaizen technique (Industrial and Financial Systems, 2001). Kaizen originated from Japan and it is the combination of two Japanese words – *Kai* (change) and *zen* (for better) (Rof, 2012; Sani & Allahverdizadeh, 2012). Kaizen costing is a model of controlling the cost incurred over unnecessary operations and non-value added resources in the firm. Simply put. it is a realistic approach to solving cost-related puzzles to enhance the overall efficiency of the firm. The assumption of Kaizen Costing theory is organization can achieve small, gradual but continuous improvements in the production process at minimal cost. Kaizen Costing helps to ensure that products meet or even exceed consumer's expectations on quality, functionality, and pricing so as to sustain the competitiveness of the product. This can be accomplished by procedurally eliminating all stages that would lead to the rise in cost of the goods produced without adding to its value in equal proportion (Rof, 2012). The theory underlines the persistent improvement in our lifestyles, social life and home life. The Kaizen costing as a technique has made enormous changes in management policies not only in Japan but around the globe (Ogundele, 2004).

The theory is relevant to the study because Kaizen costing facilitates cost control and enhance corporate performance through the application of continuous improvement approach to reduce cost of production. Kaizen costing is applied during the production stage of the product life cycle and the focus is on the product quality and cost reductions.

3. METHODS

3.1 Research Design

This study adopted an *ex-post facto* design so as to actualize the specific objectives of the study. This type of design involves the ascertaining of the impact of the past factors on the present happening or event. *Ex-post facto* design was adopted because of the variables involved, which can only be estimated through the collection of secondary data. Therefore, this type of research design is suitable in this study because the required data for the dependent and independent variables used are already in existence.

The study employed secondary data which were obtained from the annual reports of the listed breweries in Nigeria for the period of 10 years (2011 – 2020). The choice of this period is predicated on the availability of financial statements of the firms (statement of financial position and statement of comprehensive income) in the annual reports which are seen as essential sources of data collection.

3.2 Model Specification

To empirically ascertain the impact of cost control on corporate performance of listed brewery firms in Nigeria, a base line model was econometrically specified by the researcher as follows:

$$ROA = \alpha + \beta_1 MATC + \beta_2 LABC + \beta_3 OHDC + \mu \qquad \text{..............} \quad (1)$$

Where

ROA   = Return on Assets (dependent variable)

MATC   = Material Cost

LABC   = Labour Cost

OHDC   = Overhead Cost

$\beta_1 \dots \beta_3$ = Slopes of coefficient of the explanatory variables

α = constant

μ = error term.

The data analysis involved the use of descriptive statistics test. Descriptive statistics was carried out in order to determine the characteristics of the research variable such the mean, standard deviation, minimum and maximum amongst others. Multiple regression test anchored on Ordinary Least Square (OLS) was also performed to ascertain the statistical significance of the hypothetical relationship between the dependent and the independent variables. Multiple regression was evaluated using the conventional probability values (P-Value). The decision rules were anchored on the conventional probability values (p-value) associated with the regression outcome of the research base line model.

4. RESULTS

4.1   Descriptive Test

Descriptive test was used to examine the characteristics of the dependent and independent variables. The descriptive result is presented in Table 1.

Table 1: Descriptive Statistics

	ROA	MATC	LABC	OHDC
Mean	0.756923	0.273615	0.019513	0.063179
Median	0.776000	0.305000	0.019000	0.046000
Maximum	0.914000	0.611000	0.042000	0.142000
Minimum	0.519000	0.026000	0.005000	0.023000
Std. Dev.	0.082106	0.127971	0.008316	0.037686
Skewness	-0.747381	-0.138614	0.655833	0.985386
Kurtosis	3.630707	3.138562	3.143679	2.540481
Jarque-Bera	4.277171	0.156088	2.829306	6.654532
Probability	0.117821	0.924924	0.243010	0.035891
Sum	29.52000	10.67100	0.761000	2.464000
Sum Sq. Dev.	0.256175	0.622313	0.002628	0.053968
Observations	39	39	39	39

Source: Authors' Computation 2023 from E-view 10.0 Version

Table 1 above shows the descriptive statistical analysis between the dependent and independent variables. The mean is the average value of the series which is determined by dividing the total value of the series by the number of observations. The average percentage of return on assets (ROA) across the selected brewery firms within the period under review (2011–2020) stood at 75.69%. This indicates that the level of listed brewery firms (Guinness, NB Plc, Champion and International Breweries) corporate performance is close to a minimum of 76% expected. Corporate performance (Return on Asset) (ROA) has minimum and maximum values of 51.90% and 91.40%. The level of material cost (MATC) averaged 30.50% over the study period. It implies that the listed brewery firms might have taken advantage of economies of scale of operation arising from the selected brewery firms consolidation to reduce material cost (MATC). The minimum and maximum values of material cost (MATC) are 0.026000 and 0.611000. The labour cost (LABC) is a ratio representing the total expenditure incurred by employers for the employment of employees during a given period. The mean value labour cost (LABC) stood at 1.95%. This means that the brewery firms under review can then divide the days in the period by the labour cost formula to calculate the days it takes to work in the firms which stood at 0.019513% on average and this shows that labour cost (LABC) exerts the small level of influence on co-op corporate performance of brewery firms in Nigeria proxied by return on assets. Overhead cost (OHDC) has the least maximum value of 0.142000.

The standard deviation is a measure of spread or changes in a series of data. The standard deviation for return on asset (ROA), material cost (MATC), labour cost (LABC) and overhead cost (OHDC) are 0.082106, 0.127971, 0.008316 and 0.037686. The volume of material cost (MATC)

has a downward growth in standard deviation. This shows that rising levels of material cost affect corporate performance which might decrease return on assets of the selected brewery firms in Nigeria.

Correlation Test

Correlation test was used to ascertain the strength and magnitude of the relationship between the dependent and independent variables. The result of the correlation test is presented in Table 2.

Table 2: Correlation Matrix

	ROA	MATC	LABC	OHDC
ROA	1.000000	-0.565404	0.317573	-0.376418
MATC	-0.565404	1.000000	-0.214654	0.279691
	0.0021**			
LABC	0.317573	-0.214654	1.000000	-0.127521
	0.0000**			
OHDC	-0.376418	0.279691	-0.127521	1.000000
	0.0033**			

Source: Authors' Computation 2023

** indicates significance at 5% level

The correlation test result in Table 2 above indicates that material cost (MATC) and overhead cost (OHDC) has significant negative relationship with return on asset (ROA) of the selected brewery firms in Nigeria. This is confirmed by the value of the coefficient estimate of -0.565404 and -0.376418 with the corresponding p-value of 0.0021 and 0.0033. This implies that material cost (MATC) and overhead cost (OHDC) has inverse relationship with the return on assets (ROA) of the selected brewery firms in Nigeria which means that increase in the material cost (MATC) and overhead cost (OHDC) leads to the reduction in corporate performance of the selected brewery firms in Nigeria.

The correlation result also showed that the level of labour cost (LABC) has significant positive relationship with the return on assets (ROA) of the selected brewery firms in Nigeria. The value of the coefficient estimate was 0.317573 while the corresponding p-value was 0.0000. This implies that labour cost (LABC) has significant and positive relationship with return on assets (ROA) of the selected brewery firms in Nigeria.

The correlation matrix broadly supports the expected signs between the dependent and independent variables however; the magnitude of the relationship was not very high. The correlation result obtained is significant at 5% level of significance.

4.2   Baseline Panel Regression Model Result

Table 3 below presents the baseline regression results using Pooled OLS, Fixed Effect Model (FEM) and Random Effect Model (REM).

Table 3: Baseline Panel Regression Results

Series	Pooled OLS (1)	FE OLS (2)	Random E. OLS (3)
C	0.42647	0.40425	0.42529
	[0.0000]**	[0.0000]**	[0.0000]**
MATC	-0.53097	-0.22400	-0.51686

	[0.0001]**	[0.6362]	[0.0001]**
LABC	0.05770	0.04717	0.05711
	[0.0635]	[0.0030]**	[0.0635]
OHDC	-0.07158	-0.04309	-0.06968
	[0.0337]**	[0.1667]	[0.0337]**
Observations	40	40	40
R-Squared	0.456	0.365	0.456
F-Value	6.3730	2.7187	6.1193
	[0.0001]	[0.0008]	[0.0001]
Hausman Test = 0.273842 P-		Value =	[0.0585]

Source: Authors' Computation 2023

** indicates 5% level of significance

In Table 3, the study considered the pooled regression result, fixed effect and random effect ordinary least square (OLS) regression results. Observing this result, the study pools all 40 observations together and ran the regression model, neglecting the cross section and time series nature of the data. It was found that the R-squared value for the pooled regression model is 0.456 indicating that 45.6% of the total variation in return on assets (ROA) is explained by the explanatory variables such as material cost (MATC), labour cost (LABC) and overhead cost (OHDC). More so, two parameters such as material cost (MATC) and overhead cost (OHDC) were found to be variables which significantly influence corporate performance proxied by return on assets (ROA) of the selected brewery firms in Nigeria. This is confirmed by their P-values [0.0001] and [0.0337] respectively. The major problem with pooled regression model is that it does not distinguish between the various firms that are in the sample. In other words, by combining different firms by pooling, the heterogeneity or individuality that may exist among the four (4) brewery firms was not considered.

In order to allow for heterogeneity or individuality among the selected listed brewery firms by allowing the selected listed brewery firms to have its own intercept value; the fixed effect model (FEM) was applied. Fixed effect model was therefore applied because it is time invariant indicating that although the intercept may change across selected listed brewery firms, it however does not change over time. The R-squared value of 0.365 indicates that 36.5% of the total variation in ROA is explained by the explanatory variables namely MATC, LABC and OHDC. However, only one explanatory variable (LABC) is found to significantly influence return on assets (ROA) as confirmed by its P-value [0.0030].

The random effect regression model was applied in order to account for the unobserved effects in fixed effect model. The random effect model shows that 45.6% of the total variations in return on assets (ROA) are accounted for, by the explanatory variables (MATC, LABC and OHDC). This is evidenced from the R-squared value of 0.456. More so, it was found that MATC and OHDC are the variables which significantly influence return on assets (ROA) as confirmed by their P-values [0.0001] and [0.0337] respectively.

The Hausman test was used to select the model (fixed effect or random effect) that will be mostly appropriate for estimation. Hausman test null Hypothesis states that random effects model is appropriate while its alternative hypothesis states that fixed-effects model is appropriate. The selection of either fixed effect model or random effect model is based on the statistical significance of the P-value. From table 4, the Hausman test statistics P-value is [0.0585]. It implies that its P-value is insignificant because it is greater than 5% (0.05) chosen level of significance. Thus, the

null hypothesis cannot be rejected. Therefore, it is concluded that random effect model is desirable for prediction.

The panel regression result presented in table 4 above, reveals that the level of labour cost (LABC) has insignificant positive effect on corporate performance of the selected listed brewery firms in Nigeria. This result is in conformity with the apriori expectation that rising level of labour cost increases cost control thereby increases the level of corporate performance of the selected listed brewer firms. It also suggests that the level of material cost (MATC) and overhead cost (OHDC) have negative and significant effect on the corporate performance of the selected listed brewery firms.

4.3   Dynamic Panel Regression Model Result

The study presents dynamic panel model regression results of Diff-1 GMM, Diff-2 GMM and System GMM. Generalized Method of Moment (GMM) is a technique that uses lagged values as instruments for the endogenous variables. System GMM combines regression in level and difference.   In level estimation, lagged differences are used as instruments while in difference estimation, lag levels are used. Results obtained from these two estimations, hence called system, are more efficient than difference GMM which is only difference estimation. The dependent variable (return on assets (ROA)) was lagged in the first year (ROA-1) and second year (ROA-2). The justification for the lag (ROA-1, ROA-2) was to ascertain the extent to which the past values of the dependent variable would affect the present value of the dependent variable in the dynamic panel estimation. Table 5 below presents the results of the dynamic panel regression model.

Table 4: Dynamic Panel Regression Results

Series	Pooled OLS (1)	Random E. OLS (2)	Diff-1 GMM (3)	Diff-2 GMM (4)	System GMM (5)
ROA(-1)	-	-	0.57545	0.52982	0.20866
			[0.0000]**	[0.0001]**	[0.0221]**
ROA(-2)	-	-	-	-0.01486	-0.0909
			-	[0.8478]	[0.1528]
C	0.42647	0.42529	-	-	-
	[0.0000]**	[0.0000]**	-	-	-
MATC	-0.53097	-0.51686	1.31529	1.20478	0.9344
	[0.0001]**	[0.0001]**	[0.4027]	[0.4575]	[0.0439]**
LABC	0.05770	0.05711	0.05317	0.04664	-0.06969
	[0.0635]	[0.0635]	[0.5618]	[0.5583]	[0.6236]
OHDC	-0.07158	-0.06968	-0.3815	-0.36107	-0.0190
	[0.0337]**	[0.0337]**	[0.6374]	[0.4989]	[0.0062]**
Instruments	-	-	8	7	7
Jarque-Bera	[0.3140]**	[0.3166]**	[0.0000]	[0.0000]	[0.1726]**
Hansen J-test	0.158837	0.153485	9.8041	10.2619	35.1684
			[0.3666]	[0.2471]	[0.1991]
ROA(1)	-	-	[0.7475]	[0.7117]	-
ROA(2)	-	-	[0.9105]	[0.9067]	-
Observations	39	39	39	39	39

Companies	4	4	4	4	4

Source: Authors' Computation 2023

** indicates 5% level of significance

Note: ROA(1) and ROA(2) are the first and second order Lagrange Multiplier test for residual serial correlation.

The dynamic panel regression results are presented in Table 4. Panel 1 reports estimates from Pooled Ordinary Least Squares (OLS) Result. Panel 2 reports Random Effect OLS Results which was adopted as suggested by Hausman test statistic. Panel 3 reports Diff-1 GMM, panel 4 reports Diff-2 GMM and panel 5 reports System GMM. While panels 1 and 2 respectively, provided estimates without the interaction term of ROA(-1) and ROA(-2) for Pooled OLS and Random Effect OLS results, panels 3, 4 and 5 gave their counterparts with interaction in difference GMM and system GMM. As expected, ROA(-1) was significant to influence the dependent variable as found in differenced and system GMM estimators. This is confirmed by their p-values such as [0.0000], [0.0001] and [0.0221] respectively. In models with the dynamic term, MATC and OHDC were found to influence ROA significantly in System GMM. This is evident as observed from their p-values of [0.0439] and [0.0062].

It was observed that in the Diff-1 GMM, Diff-2 GMM and System GMM results all the diagnostics are satisfactory. Hansen J-test was used for test of validity of instrument and it followed an X^2 distribution with r degrees of freedom under the null hypothesis of valid instruments. The Hansen test accepts the validity of instruments in Diff-1 GMM, Diff-2 GMM and System GMM. The acceptance of validity of instruments is confirmed by their p-values of [0.3666], [0.2471] and [0.1991] respectively.

The results from the Hansen J-test confirm the validity of the instruments in the GMM system. As expected, there was absence of first and second order serial correlations in Diff-1 GMM and Diff-2 GMM. Since the test for first and second order residual serial correlation was insignificant, it shows that the panels do not suffer from serial correlation.

4.4 Discussion of Results
4.4.1 Impact of Material Cost on Corporate Performance of Brewery Firms in Nigeria

The finding of the study shows that material cost has significant impact on corporate performance of brewery firms in Nigeria. This result is in line with the findings of Okwo and Ugwuta (2012), Oyerogba, *et al.* (2014), and Mutya (2018), which established positive relationship between material cost and corporate performance indicators in manufacturing firms in Nigeria. However, the finding is in disagreement with that of Mamidu and Akinola (2019), Oyedokun, Tomomewo and Owolabi (2019), and Nwankwo (2022) that found a negative relationship between cost of material and profitability of manufacturing companies. Also, Godwin, Amos and Sunday (2019) found that the cost of raw materials for manufacturing firms in Nigeria is significant and negatively linked.

4.4.2 Effect of Labour Cost on Corporate Performance of Brewery Firms in Nigeria
The finding of the study shows that labour cost has no significant impact on corporate performance of brewery firms in Nigeria. This finding is in consistent with the results of the studies of Mamidu and Akonola (2019) who found that direct labour cost has negative effect on the corporate performance of manufacturing firms. The divergent results of Okwo and Ugwuta (2012), Oyerogba, *et al.* (2014), Mutya (2018) and Nwankwo (2022) established positive

relationship between labour cost and corporate performance indicators in manufacturing firms in Nigeria.

4.4.3 Impact of Overheads on Corporate Performance of Brewery Firms in Nigeria

The finding of the study shows that overheads have significant impact on corporate performance of brewery firms in Nigeria. The finding was corroborated by results of the studies of Okwo and Ugwuta (2012), Oyerogba, *et al.* (2014), Mutya (2018) and Nwankwo (2022), whose different studies confirmed that labour cost has a significant relationship with corporate performance of manufacturing firms in Nigeria.

5 CONCLUSION AND RECOMMENDATIONS

The study examined the impact of cost control on corporate performance of brewery firms in Nigeria for the period of 2011 to 2021. Based on the findings, the study concluded that the elements of cost control used in the study such as material cost and overheads have positive and significant impact on corporate performance of brewery firms in Nigeria while labour cost has positive and insignificant impact on corporate performance of brewery firms in Nigeria. This means that cost control has impact on the corporate performance of brewery firms in Nigeria.

The study then recommends the followings:

i. The management of brewery firms in Nigeria should embark on cost control strategies that emphasized on material cost reduction in order to improve on their corporate performance indices.

ii. Remuneration policies of brewery firms should be prudently formulated to reduce labour cost as it has positive though insignificant relationship with corporate performance.

iii. The management of brewery firms in Nigeria should formulate and maintain efficient and effective cost control policies that will reduce overhead absorption in order to achieve their corporate performance objective.

iv. There is need for every brewery firm to put in place cost control in the production department to ensure effective ascertainment of cost units of their products.

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