

## IMPACT OF INDIRECT COSTS ON THE PROFITABILITY OF MANUFACTURING BUSINESSES : A REVIEW OF BREWERIES IN NIGERIA

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### ABSTRACT

This study investigates the impact, of indirect costs on profitability of manufacturing businesses: a review of breweries in Nigeria. Specifically the study found the extent: to which personnel costs, marketing and distribution cost and general expenses impact on the profitability of breweries in Nigeria. In carrying out the study, correlational research design involving secondary data collected from the annual statement of the two companies for the period 2006-2015 \was used. The data collected from the secondary source was analysed using SPSS 23, descriptive statistics and simple regress/on analytical method. At the end of the study, the analysis revealed that personnel costs has a significant effect on profitability, also there is a significant relationship between marketing and distribution cost and profitability, finally general expenses exert an insignificant effect on profitability. Based on the findings, it is therefore recommended that Brewery companies whether local or multinational should constantly formulate policies geared towards effective cost control in view of its impact on profitability. Also, financial managers should pay attention lo the management of each component of indirect costs as the adverse effect on one could, negate the positive effect on the other components.

*Key Words: Indirect Cost, Profitability, Personal Cost, Marketing and Distribution Cost, General Expensive*

### INTRODUCTION

#### Background to the Study

Globally, manufacturing sector has continued to contribute to the development of nation's economy. Therefore, for a viable economy to be actualized, firms including manufactory companies must be well positioned to make profits which at the long run will ensure their survival and growth (Nwosu, 2014).

However, In recent time, manufacturing

companies are constantly faced with the challenge of the growing/astronomical take in costs which impact on profit of businesses and often results to constant stagnation . (Ogbadu, 2009), This challenge has further led to the liquidation of many manufacturing companies. Equity Research Report (2006) asserted that at current, only about four breweries are still producing in Nigeria out of thirty three numbers of breweries in 1990. This is however against the trend in the early 1980's, when

production in this sub sector grew rapidly. As a result of restrictions placed on the barley malt importation that relate to the use of locally produced substitute, capacity dropped marginally in 1987 and 1988. Capacity utilization fell to about 30% during this period

Wachukwu, (2013) opined that the Nigeria brewery industry is key player and major contributor to the manufacturing sector. He further noted that manufacturing sector is key contributor to the growth of every economy especially developing economies, he further asserted that the federal government of Nigeria earned N179.5 billion revenue from non oil sector in the first quarter of 2013; this receipt was driven mainly from the industrial and manufacturing sub-sector which amount to 66.9%. Nwosu, (2014) pointed out that one of the engine of economic growth is the manufacturing sector as it serves as a creator of wealth, an antidote for unemployment and enables sustainable development, he further noted that this sector faces more challenges than any other sector in the economy. The sector has attracted vast foreign investment, which has enabled the companies to thrive and enlarge their capacity. For instance 54% shareholdings in Nigerian breweries was acquired by Heineken in 2000 and more than \$500 million (about N77.5 billion) was subsequently invested in the company to upgrade its installed capacity, which is now said to be about 12 hectolitres (Adedipe, 2007).

Amidst all these, economic benefit derived from the brewery industry can only be maintained when profit are made

Company's performance in terms of their finances is also an indication of how lucrative the industry is. A survey of the existing reports indicate that Nigerian breweries Plc for instance experienced a decline in the company's profit margins in first

quarter (Q1) 2016, compared with Q1 2015. This was a reflection of the challenges the company faced in the difficult operating environment, rising inflation, increased finance and input costs and weak consumers' spending (Equity Research report 2016).

Ogben, (2009) opined that indirect costs are all costs incurred in the manufacturing process which cannot be traced directly to any of the units produced and this includes costs of foreman's salary, depreciation of factory plant and machinery, factory rent and rates, factory cleaning, insurance of factory plant and machinery, factory power and factory repairs. He further noted that all these costs affect the level of profitability of companies. So many studies have been carried out on this subject matter, but most of them are in foreign countries. Hence as a result of contribution of the brewery sub sector to the Nation's economic growth, this search considers it necessary to evaluate the impact of indirect costs on the profitability of breweries companies in Nigeria.

### **Statement of the Problem**

Companies in Nigeria especially brewery sector do not meet up with the expectations of various stakeholders. This sector has been said to suffer from inefficient and injudicious management of resources which has led to shut downs and breakdowns of productions of the breweries at various levels (Ogbadu, 2009). Ogben (2009) and Okwo and Ugwunta (2012) held strong views that most of this problems were caused by high overheads which according to them have direct consequences on the performance of the industry. Personnel costs, marketing and distribution, general and administrative expenses are some of the indirect costs impacting negatively to the survival of companies in Nigeria. Also factors such as high interest rate paid for borrowed money,

costs of depreciation owing to weather conditions, repairs of existing facilities, high tax rates in the country, multiple taxation, security challenges and devaluation/fall in the value of naira, were said to have been a bane to smooth business in Nigeria.

In view of the above problem of overhead cost in the business activities of company in Nigeria especially the brewery industry, research of these nature become highly important. Some of these problems have been highlighted by other researchers (Cynthia and Birger 1991; Adjeji 2010; Owusu 2010) in other developed and developing countries, but there is no known research to the researcher in this regard in Nigeria. Hence the study investigates the impact of indirect costs on profitability of Breweries in Nigeria.

### **Objectives of the Study**

The primary objective of this study is to investigate the effect of indirect costs in brewery companies and determine its impact in respect to corporate performance.

The specific objectives of the study include;

1. To find out the extent to which personnel costs affect profitability of brewery companies in Nigeria.
2. To determine the extent to which marketing and distribution cost contributes to profitability of brewery companies in Nigeria.
3. To ascertain the effect of general expenses on profitability of brewery companies in Nigeria.

### **Research Questions**

1. To what extent do personnel costs affect profitability of brewery companies in Nigeria?
2. To what extent does marketing and distribution cost contributes to profitability of brewery companies in Nigeria?
3. What is the effect of general expenses on profitability of brewery companies in Nigeria?

## **METHODOLOGY**

### **Research Design**

Research design is a base plan which is intended to guide in the collection and analysis of the research. It shows the way the series of actions are planned and how research activities that lead to the solution of identified problems are made to work (Cooper and Schinder, 2006).

This research is conducted in Brewery Companies of Nigeria. The population of the study is seven breweries presently quoted on the Nigerian Stock Exchange market. The essence of using these companies is based on the fact that it contributes maximally to the Gross Domestic Product (GDP) of the country. Previous studies have noted this as cited in the literature review above. Thus it is imperative to examine the impact indirect costs have on the profitability of brewery industry in Nigeria.

This study used purposive sampling technique also known as judgmental sampling. Only companies that met the researcher's criteria were used for the study.

The criteria for this selection were companies with the largest market and asset base structure.

The sample size was derived from the seven breweries companies in Nigeria, the sample size include two companies which are Nigerian Breweries Plc and Guinness Nigeria Plc as they constitute an oligopoly structure with the largest market and asset base.

This study used only secondary data which was obtained from the annual report of selected list of brewery companies quoted in the Nigeria Stock Exchange. Different published journals, articles, pamphlets, textbooks and papers presented at seminars both within and outside the companies comprises of mostly the review of related literature

The independent variables is indirect costs measured by the following sub-variables

**Personnel costs:** This is measured as annual total costs comprising of wages, salaries, pension expenses and other employer contribution reported by the companies.

**Marketing and distribution costs:** This is measured as annual total costs treatable to delivery of goods or service to esteemed customers.

While dependent variable corporate profit P measured by

**Return on assets (ROA):** This is a financial ratio that shows the percentage of profit a company earns in relation to its overall resources. It calculated by the formula;

$\frac{\text{Net income} \times 100}{\text{Total assets}}$  where net income is profit after tax derived from the income statement. Total assets

The data collected was analysed using the simple linear regression as tool for data analysis. The technique was chosen because of its effectiveness in investigating and estimation of the impact of one variable on another. Descriptive statistics was also employed in the study. The analysis was conducted using Statistical Package for Social Science (SPSS) version 23.

Data was extracted from the annual reports and accounts of the two quoted companies in the Brewery Sector of the Nigerian Stock Exchange (NSE). The data span a 10-year period (2006-2015)

This study is looking for the positive effect of the dependent variable that might be caused by changing the independent variable.

The dependent variable is corporate profit,

represented by Y, while the independent variable is, indirect costs. Represented by x

Therefore  $Y = F(x)$

$Y = f(X_1, X_2, X_3, X_4)$

Where Indirect costs x is operationally defined as

$X_1 = \text{Personnel costs- PC}$

$X_2 = \text{Marketing and distribution cost- MD}$

$X_j = \text{General expenses- GES And Profitability P}$

is operationally defined as

$Y_1 = \text{Return on asset P}$

### 3.11 Model Specification

Nwabuokei, (2001) put the general models of regression in the form  $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + e_i$

Where V is the function of x and  $e_j$  is the error term.  $\beta_0$  is the intercept.

Adopting this formula, we have that  $P = \beta_0 + \beta_1 PC + \beta_2 MD + \beta_3 GES + e_i$

Where;

P is the Profitability of the companies measured by return on assets.

PC is the personnel costs

MD is the marketing and distribution cost

GFS is the general expenses

Profitability of the companies taken as the dependent variables while personnel costs, general expenses, and marketing and distribution costs were regarded for the purpose of this study as independent variables.

## DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSION OF FINDINGS

Data Presentation

Table 4.1: Aggregate Performance of Guinness Nigeria Plc and Nigerian Breweries Plc for the Periods.

Years	Profit/ ROA	Personnel cost(Pc)	General expenses(GES)	Marketing and distribution cost (MD)
2006	0.26	14933966	17627876	23462061
2007	0.36	17667428	18348956	27621920
2008	0.41	18291363	18220493	32772212
2009	0.44	21193835	21193835	34557159
2010	0.45	26409891	26432293	43392070
2011	0.37	25442423	28886151	97854969
2012	0.28	32162186	33591871	62397179
2013	0.27	36864986	36708026	68949650
2014	0.19	38344476	38252897	68132056
2015	1.17	50775617	49525799	72187587

Source; Extracted from the audited financial statement of the companies. (2006-2015).

The data above was derived from the audited financial reports of the two companies under study. The aggregate data on each variable were obtained by taking the sum of the variable of both companies for the period. The aggregate profit was derived from the profitability ratio which is return on asset.

**Descriptive Analysis**

The table below shows the descriptive analysis of profitability, personnel costs, general expenses, and marketing and distribution cost for the companies.

TABLE4. 2: Means and Standard Deviations of the variables used for the study.

	P	PC	MD	GES
Mean	0.3204	28208617	28878820	53132686
Maximum	0.45	50775617	49525799	97854969
Minimum	0.17	14933966	17627876	23462061
Std. Dev.	00993	11295760.863	10613338.732	24289421.576
		42	68	44
Observations	10	10	10	10

Source: SPSS 23.0 output, 2016.

Main attributes of the variables under study were shown table 4.2 above in form of descriptive statistic. However, the average profitability is

about 32%.The average expenditure on personnel cost was N28 million.

Similarly, the average expenditure on marketing and distribution cost was N28 million and that of general expenses was N53million respectively for the period under review. On the other hand, the minimum value for the personnel cost was N14 million and its maximum value stood at N50 million. For the profit, the minimum value was 17% and its Maximum value was 45%. Further, the minimum value for the marketing and distribution cost was N17 million with a corresponding maximum value of N49 billion for the period. For general expenses the minimum value stood at N23 million and its maximum value was N97 million. The standard deviation of 0-0993; Nil million; N10 million and N26 million for profitability, personnel costs, marketing and distribution cost and general expenses respectively were indicative of the variables" deviation around their respective means.

**Testing of Hypotheses**

Hypothesis One: Hot Personnel costs have no significant effect on profitability of brewery Company in Nigeria.

TABLE 4.3; Coefficient of Regression of Aggregate Profit (Agg P) Against Aggregate Independent Variable Personnel costs (PC)

Model	Un standardized Coefficients		Standardized Coefficients	T	Sig.(P-value)
	B	Std. Error	Beta		
(Constant) I	0.490	0.069		7.148	0.000
PC	-6.003E-009	0.000	-0.683	-2.644	0.030

a. Dependent Variable: Agg P

Source: Statistical data obtained from statistical package (SPSS)

Decision rule: SPSS results were used to test the hypothesis. Following statistical rules

Onwumere (2009), if p-value of the regress and (independent variable) is less or equal to 0.05 ( $P < 0.05$ ); then the relationship is statistically significant at 5% significant level. The decision is made from the table above.

Decision: Reject  $H_0$  since P-value (0.030) is less than  $\alpha$ -value (0.05). hence  $H_1$ , is accepted. This means that the value of personnel cost has significant effect on profitability of brewery Company in Nigeria.

The table below was used in examining the relationship between the variables

TABLE 4.4: Result of R and R<sup>2</sup> Test<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	f-test estimate	Durbin Watson
1	.683 <sup>a</sup>	.466	.400	.07694	6.991	0.809

b- Dependent Variable: Agg P

Source: Statistical data obtained from statistical package (SPSS)

The coefficient of the determination for the study r-squared is 0.466 which is 47% this implies that the level of the relationship that exists between profitability and personnel costs for brewery companies in Nigeria is accounted up to 47%. The remaining 53% is explained by other factors not explicitly captured by the model. The adjusted r-squared is 0.400 which is 40% shows how relevant the variable under consideration is to determining the changes that occur in the independent variable. Durbin Watson value of 0.809 indicates that there is no evidence of multi linearity among the variables used. The F-Test value (6.991) shows that the model is a good fit.

Hypothesis Two:  $H_0$  There is no significant relationship between marketing and distribution costs and profitability of brewery companies in Nigeria.

TABLE 4.5: Coefficients<sup>a</sup> of Regression of Aggregate Profit (Agg P) Against Aggregate Independent Variable Marketing and distribution cost (MD)

Model	Un standardized		Standardized	T	Sig.(P-value)
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	.512	0.071		7.167	.000
MD	-6.627E-009	0.000	-0.708	-2.838	.022

a. Dependent Variable: Agg P

Source: Statistical data obtained from statistical package (SPSS)

Decision Rule: Reject  $H_0$  if P-value is less than  $\alpha$ -value (level of significance)

Decision: Reject  $H_0$  since P-value (0.022) is less than  $\alpha$ -value (0.05), hence  $H_1$  is accepted. Therefore, Marketing and distribution cost has a significant relationship with profitability of brewery companies in Nigeria.

The table below was used in examining the relationship between the variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F-test estimate	Durbin-Watson
1	.708 <sup>a</sup>	.502	.439	.07435	8.056	.748

a. Predictors- (Constant). MO

b. Dependent Variable: Agg P

SOURCE: Statistical data obtained from statistical package (SPSS)

The coefficient of the determination for the study r-squared is 0.502 which is 50% this implies that the level of the relationship that exists between profitability and marketing and distribution cost for brewery companies in Nigeria is accounted up to 50%. The remaining 50% is explained by other factors not explicitly captured by the model. The adjusted r-squared is 0.439 which is 44% shows how relevant the variable under consideration is to determining the changes that occur in the independent variable. Durbin Watson value of

0.748 indicates that there is no evidence of multicollinearity among the variables used. The F-Test value (8.056) shows that the model is a good fit.

Hypothesis Three: HOS General Expenses have no significant effect on profitability of brewery companies in Nigeria.

TABLE 4.7: Coefficients<sup>3</sup> of Regression of Aggregate Profit (Agg P)" Against Aggregate Independent Variable GES.

Model	Unstandardized		Standardized	T	Sig.(P-value)
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	.402	.078	-.375	5.180	.001
GES	-1.534E-009	.000		-1.145	.285

a. Dependent Variable: Agg P

SOURCE: Statistical data obtained from statistical package (SPSS)

Decision Rule: Reject HO if P-value is less than a-value (level of significance) Decision: Accept HO since P-value (0.285) is greater than a-value (0.05), hence HO is accepted. This implies that General Expenses have no significant implications on the profitability of brewery companies.

The table below was used in examining the relationship between the variables TABLE 4.8:

Result of R and R<sup>2</sup> Test<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F-test estimate	Durbin-Watson
1	.375 <sup>d</sup>	.141	.033	.09763	1.311	.569

a. Predictors: (Constant), GES

b. Dependent Variable: Agg P

Source: Statistical data obtained from statistical package (SPSS)

The coefficient of the determination for the study r-squared is 0.141 which is 14% this implies that the level of the relationship that exists between

profitability and general expenses for brewery companies in Nigeria is accounted up to 14%. The remaining 86% is explained by other factors not explicitly captured by the model. At 0.05% level of significance, the result showed a statistically insignificant relationship between marketing and distribution costs and the profitability of brewery companies in Nigeria. The adjusted r-squared is 0.033 which is 3% shows how relevant the variable under consideration is to determining the changes that occur in the independent variable. The value of adjusted r-squared (3%) depicts that the independent variable influences the dependent variable to a low degree. Durbin Watson value of 0.569 indicates that there is no evidence of multicollinearity among the variables used. The F-Test value (1.311) shows that the model is not a good fit.

Result and Discussions of Findings

Objective 1: To find out the extent to which personnel costs affect profitability of brewery companies in Nigeria. In this study, the results of the regression for the first hypothesis test revealed that personnel cost has a negative significant impact on profitability of brewery companies in Nigeria. That is as personnel cost increases by N1, profitability leads to decrease by N0.68k. The coefficient of determination as given by 47% show that personnel costs significantly made impact on the profitability of the companies under study. Thus, the p-value in the above table is 0.03 which is less than 0.05% level of significance. Thus, the first hypothesis which stated that personnel costs have no significant effect on the profitability of brewery Company in Nigeria is rejected. It is therefore concluded that increase in personnel costs is capable of decreasing reasonably the profitability of the companies. This is consistent

with the general view that employment of unproductive staffs in the companies will lead to an increase in the personnel cost without an invariable increase in profitability. Hence this study is consistent with that view.

Objective 2: To determine the extent to which marketing and distribution cost contributes to profitability of brewery companies in Nigeria. Utilizing, the regression results for the second hypothesis test, it was found out that marketing and distribution cost has a negative significant impact on profitability of brewery companies in Nigeria. That is as marketing and distribution cost increase by N1, profitability decreases by NO.79k. The coefficient of determination as given by 50% show that marketing and distribution cost significantly made impact on the profitability of the companies studied. Also the p-value in the above table is 0.022 which is less than 0.05% level of significance. Therefore the first hypothesis which stated that there is no significant relationship between marketing and distribution cost and profitability of Brewery Company in Nigeria is rejected. In Conclusion therefor, there is significant relationship between marketing and distribution cost and profitability of the companies.

Objective 3: To ascertain the effect of general expenses on profitability of brewery companies in Nigeria. The regression result for the third hypothesis revealed that general expenses have a negative and insignificant impact on profitability of Brewery Company in Nigeria. The coefficient of determination r-squared is 14% for the firms explaining that the variation in profitability was signified by general expenses up to 14% for the companies whereas the remaining 86% is as a result of other factors, such as; the company's

reputation. The brand name of the company, marketing and sales promotion, product strategies. The quality of products and customers loyalty which was not captured by the model. The p-value in the above table is 0.285 which is greater than 0.05% level of significance. Thus, the first hypothesis which stated that general expenses have insignificant effect on profitability of brewery Company in Nigeria is accepted. It is therefore concluded that general expenses is not significant in improving profitability of Brewery Company in Nigeria. However, the finding of this study contradict the result of Okwo and Ugwunta (2012) From the findings of the three hypotheses tested; improvement on management of brewery indirect costs remains the major influence in determination of profit.

## SUMMARY OF FINDINGS

This study examined the impact of indirect costs on profitability of selected breweries in Nigeria. The study commenced by establishing the gap that spurs this study. It was noted in the statement of the problem that despite the fact that the indirect costs of the companies have increased over the years and constitute a reasonable amount of organizational costs, impact of such indirect costs on the profitability of companies has not received appropriate attention in terms of research. The study employed descriptive statistics and simple regression analysis. The descriptive statistics conducted revealed that general expenses have the highest average (mean) value which indicates that the general expenses of the companies are in high average. The empirical findings conducted with simple regression revealed that personnel costs exert negative significant effect on profitability of brewery Companies in Nigeria. Marketing and

distribution cost has a significant relationship with the profitability of brewery Companies in Nigeria. Also, general expenses have an insignificant impact on the profitability of Brewery Companies in Nigeria.

## CONCLUSION

The study empirically investigated the impact of indirect costs on profitability of breweries in Nigeria using secondary data gathered for the analysis from the annual reports of the sampled breweries for a period of 2006-2015. Measures of profitability were examined and related to proxies for the indirect costs. The study found out that the independent variable, personnel costs and marketing and distribution cost affect profitability at varying level of significance with marketing and distribution cost having greater significance effect. Also, the study revealed that general expenses, have negative insignificant impact on profitability. The study therefore, concludes that personnel cost and marketing and distribution cost affects profitability (returns on assets). While general expenses have insignificant impact on profitability.

## RECOMMENDATIONS

The researcher hereby recommends as follows:

1. Brewery companies whether local or multinational should constantly formulate policies geared towards effective cost control in view of its impact on profitability.
2. Financial managers should pay attention to the management of each component of indirect costs as the adverse effect on one could negate the positive effect on the other components.
3. The study recommends that since marketing

and distribution cost is a factor that influences profitability of the companies, it is imperative for the management of business organizations to review their existing marketing and distribution policy on their products so that multiple strategies could be employed in a cost effective manner to reach out to target consumers and by implication increase profitability of the firms.

4. Government should re-introduce and sustain the minimum target of 60% local content policy set for breweries and give incentive to manufacturers.
5. Finally, other researchers should probe on this area by increasing the number of years and select other types of indirect costs for the study. Method of analysis should be changed to see if a different result will be gotten.

### Contribution to Knowledge

This study has identified key indirect costs that significantly affect profitability of Breweries in Nigeria; studies on this topic were carried out by other researchers in other countries. A major contribution to knowledge discovered in the research is that although it is a general view that an increase in marketing and distribution cost leads to increase in profitability, in breweries sector increase in its marketing and distribution cost decreases its profitability.

### Limitations and Directions for Further Study

The limitation of the study is the inability of the researcher to find adequate theories relating to indirect costs and profitability.

The researcher therefore suggests the following:

1. Future researchers on this study should find out theories relating to indirect costs and profitability.

2. This research has examined the impact of indirect costs on profitability of breweries in Nigeria. Further studies can be carried out on other manufacturing sectors to see whether it would replicate the findings of this present study.
3. The extension of this study to all the companies not listed in the Nigerian Stock Exchange thereby using a large sample to see whether it would replicate the findings of this present study. This is subject to the availability of data for the companies

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