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DRIVING ORGANISATIONAL COST EFFICIENCY THROUGH THE IMPLEMENTATION OF ACTIVITY-BASED BUDGETING (ABB) MECHANISM (A THEORETICAL STUDIES)

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Abstract

The paper titled "Driving Organizational Cost Efficiency Through the Implementation of Activity-Based Budgeting (ABB) Mechanism" examines quantitatively, the appropriate approach available for use in analyzing the role of cost effective technique in the preparation of organizational budget. By utilizing an illustration to hypothesize the budgeting process in a manufacturing organization, the study considers the benefits, potential, and challenges connected with the application of this strategy. Activity Based Budgeting technique is use in the management, coordination and harmonization of a corporate organization. The paper discovered that with a successful implementation of Activity Based Budgeting system by an organization, the information and data gathered by management accountants might be used to analyze trends, for estimating and modelling consistent with scenarios such as "What if...analysis?" By estimating the quantities and volumes on an outlined organizational period, information concerning all cost objects, cost inductors, necessary amounts and therefore the level of resources costs are often obtained by the organization that will aid management in their cost control. The methodology applied is a quantitative approach of secondary data justified by a simple percentage of trend analysis, ANOVA and Regression Coefficient Analysis. The article is both theoretical and practical in nature. It offers a critical review of the chances of implementing new budgeting trends from a theoretical standpoint. From a practical standpoint, it has the potential to broaden managers' awareness of a handful of novel budgeting approaches. The paper concluded that the adoption of Activity Based Costing significantly improve the cost efficiency of corporate entities in Nigeria.

Key words *Activity-Based Budgeting, Activity-Based Costing, Processes, Performances, Cost Drivers,*

1. Introduction :

The efficiency in the harmonization of organizational activities within a business unit contributes to the fulfilment of a number of long-term competitive advantages of the entity (Huynh, 2013). Operational efficiency and strategy are the two factors that contribute to the entity's long-term performance and, as a result, the management team's decision-making success (Pazarceviren & Celayir, 2013). The process of market globalization is one of the most difficult complications for manufacturing companies attempting to survive and develop to their full potential on the worldwide market. In today's competitive market, professionals in the field of management accounting must employ the most up-to-date tools in order to provide managers with the necessary data for substantiation and effective decision-making. As a result, this study concludes that the Activity Based Budgeting method significantly contributes to ensuring the transparency of business costs, which are frequently increasing, as well as practically assisting manufacturing companies in identifying profitable markets, distribution channels, and clients/beneficiaries of their products (Shane, n.d.).

Arising from the shortcomings of the traditional budgeting is the need therefore to appraise the potentials for putting into practice the activity based budgeting in the entities surrounded by the manufacturing industry in Nigeria and to stress the benefits of its treatment, particularly as regards performances enhancement. At the moment, the Activity Based Budgeting is observed among the

commercial organizations that employ it, since it replaces the traditional budget cycle and responds to criticisms of Nigeria's budget procedures. Our attempt in this research is to establish or propose a starting model for carrying out the successful execution of the ABB method that will aid efficiency in cost control within the manufacturing industry in Nigeria.

The following hypothesis will guide the analysis of this study.

H_0:

The adoption of Traditional Budgeting Technique as against the Activity Based Costing Method does not significantly drive the organizational cost efficiency.

H_1:

The adoption of Activity Based Costing method in place of Traditional Budgeting significantly drive the organizational cost efficiency.

2. Conceptual Framework :

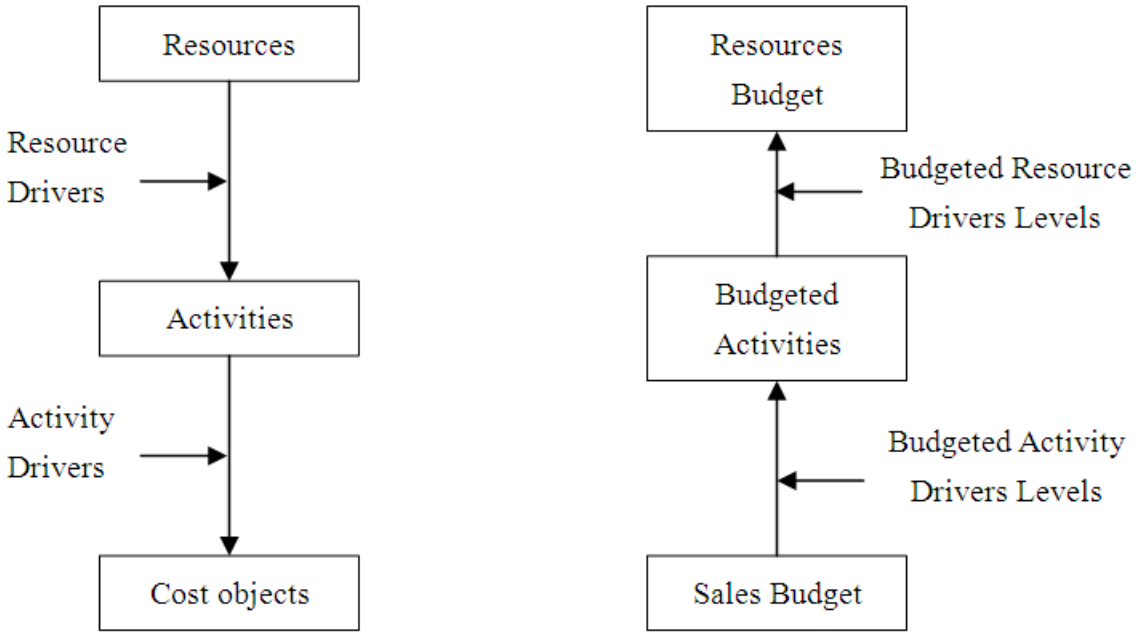
In accordance with the international specialists on budgeting, the two foremost dimensions on which the activity based method practice is based are: Activity Based Analysis (ABA) and Activity Based Costing (ABC). The first axis is centered on analyzing every function that supports detailed behaviors, and the second axis is centered on establishing a set of rules and processes that enable the tracking, analysis, and assignment of costs on computed items. The ABC technique follows the path of the "business process," focusing on just those procedures that provide value and satisfy customers (Morrow and Hazell, 1992; Hixon, 1995; Cokins, 1999). Because activity analysis highlights the function, importance, value, and efficiency of each part of the business process, Activity Based Budgeting must be tailored to the entity's chosen business process. The entity's business process must be determined for an honest implementation and operation of Activity Based Budgeting (Rohde & Issue, 2009). All budgets pertaining to the processes determined by the entity are getting to be supported by the two primary axes previously indicated for an honest implementation and operation of Activity Based Budgeting. Cost variability and hierarchy, budget flexibility, and responsibility accounting are the main elements of Activity Based Budgeting (Wilson, 1987; Kaplan, 1994; Mitchell, 1994; Wilhelmi and Kleiner, 1995; Horngren et. al., 1997).

Activity-based budgeting is a new technique to budgeting that has aided ABC. Activity-based budgeting makes use of information about the links between the number of production units and the activities necessary to provide those units to generate a precise estimate of activity needs that underpins the proposed production plan. The two primary advantages of ABB are: (1) it identifies instances where additional capacity – both physical and human capacity (i.e. people-oriented resources) is required to provide most of the maintenance and repair tasks in businesses. (2) It allows for a more precise projection of future expenses (Kaplan (2008). Hansen and Mowen (2003), presented that the ABB begins with output then determines the resources necessary to make that output. In order to create value, the business should ideally transform its vision into a technique with

measurable goals. Growing market share, boosting sales rates, cutting expenditures, raising profit margins, enhancing productivity, and lowering the value of capital are all ways to add value.

A budget may be examined from three angles: a traditional functional approach, a flexible budgeting approach, and an activity-based approach. Traditional budgeting focuses on the use of functionally based line items such as salary, supplies, and equipment depreciation, among other things. The flexible budget divides the functionally based line items into fixed and variable components based on cost behavior. From activities and their drivers, the ABB works backwards to the fundamental costs (Huynh, 2013).

Traditional budgeting focuses on the end result rather than the technique or the source of the problem. ABB, as a method specialist, provides managers with advise on how to achieve the desired objectives. When activity-based budgeting is used, the root causes are frequently found, and this information is frequently used to improve process and price efficiency (Hansen and Mowen, 2003). A comparison of the ABC and ABB is as presented in the figure 1 as follows:



Source: adapted from Horngren (2007)

Figure A1. *TB and ABB compared*

The ABB strategy is the inverse of the TB technique. The diagram above depicts the key ideas and differences between the TB and ABB approaches to allocating resources to activities and products. The expected demand for products is the starting point for ABB (sales budget). It focuses on estimating demand for each activity's output based on its cost driver. Then, based on how quickly activities use resources, estimate or budget the amount of resource required. Some managers think that ABB's emphasis on activities and their resource usage is more effective for waste management and efficiency improvement. According to Hansen and Mowen (2007), building an ABB requires the following four steps:

Step 1:

The output of the divisional unit must be determined;

Step 2:

The actions required to produce the output, as well as the factors that drive them, must be recognized;

Step 3:

The demand for each activity must be estimated;

Step 4:

It is now time to figure out how much it will cost to generate the necessary activities.

As a result of the above, one may conclude that, the ABB is based on predicted production. It is crucial to ensure that ABB is based on predicted production. It is also crucial to note that the typical budgeting method sometimes necessitates planning forward from previous years' experience, whereas ABB plans backward from next year's output. As a result, the difference between the two techniques may be determined to be more than semantic. Furthermore, the ABB strategy creates output by combining resources and activities, giving managers far more knowledge and the opportunity to eliminate non-value-added operations.

2.2. The Activity-Based Budgeting in comparison with the Traditional Budgeting :

In trying to make a comparison between the Activity Based Budgeting (ABB) and accordingly the normal budgets (table 1), most specialists within the accounting field identified the next aspects:

Table A1. **Association between Activity-Based Budgeting and traditional budgeting**

Activity-Based Budgeting	**Traditional budgets**
• Specialise in the work volume and of the prices of Processes • Measure the results and determine and identify the unused capacities • Identify the necessary resources for the planned production in order to set out expenditure Limits • Make sure the management, with the likelihood of transformation of the organizational thinking regarding the fixed costs • Specialise in the used of capacity versus the unused Capacity • Represent a possible solution for the budget process by increasing the important participation of the workers	• Specialise in workers and on departmental costs • Measure the consequences, but do not determine and do not identify the unused capacities • Do not fulfil the purpose of a global budget, representing only analytical and control • They’re supported a iterative negotiation process between the managers of responsibility centers and thus the senior management • Specialise in the fixed costs versus variable costs

• Represent a tangible solution for brief term planning of strategic objectives, as they specialise in the essential processes of the work place for customer's satisfaction • Unify the efforts made by various functions, such as: processes reengineering or processes revaluation during a single effort directed towards the strategic objectives planned by the entity for a brief or future	

Source: Adapted from Capusneanu 2013

2.3. Phases in the Activity-Based Budgeting :

As per the phases of the activity based budgeting, a number of great experts within the world of management accounting expressed their opinions, such as: Shields (2013), Hixon (1995), Horngren (1997), Kaplan (1998) and Cooper, Cokins (1999). In order to satisfy the sales and production objectives, ABB assesses the number activities, taking into cognizance the activity inductors, resources and their sizing. Essentially, this technique is an instrument of simulation at a worldwide as regards the assignment or reassignment of resources needed for carrying out activities and attaining production.

According to the experts' opinions, the phases of the activity based budgeting are as stated in the following:

1. Estimation of key factors of the budget (estimations regarding the entire value of the quantities of products obtained and therefore the sales to customers);

2. Establishment of the organizational activities (elaboration and execution of the activity based budget);

3. Determination of the required resources (quantity and type) so as to perform the organizational activities;

4. Identification of the entire of necessary resources so as to satisfy the demands;

5. Determination of the capacities at the extent of activities and at the extent of resources.

3.0 Methodology of Implementation of activity-based budgeting :

The comprehensive technique, such as Activity Based Budgeting (ABB), seeks to calculate a whole cost as accurately as possible by analyzing the causality relationships between products/services and activity resource consumption. Budgeting is a job category that is done inside the corporate entity by the employees of the technical department, production and work design, organization, and planning departments, based on an integrated organization.

An exact management and harmonization are carried out inside the below specified business entity by collecting the operations and stressing straight on the links that exist between them and thus the involved resources, respectively the stress the consumers. As a result, we believe we have discovered the solution to the problem investigated in this study. Activity based budgeting, when combined with

the ABC/ABB approach, might potentially be a management strategy that builds a sound foundation for financial planning and budget reporting.

3.1 Methodology :

On this study, the researchers actively constructed an economic tool for modeling and assessing exposure as well as conducting a risk exposure assessment of cost misbehavior.

3.1.1 Research variables :

As shown in the chart below, the research comprises of three (3) significant or critical variables: Activity Based Costing, Traditional Budgeting, and Cost Efficiency:

Table A2: Constructs and their roles

Construct name	Independent variables	Dependent variables
Activity Based Costing	X	
Traditional Budgeting	X	
Cost Efficiency		X

Source: Researchers field study, 2021

3.1.2 Experimental Modelling :

The primary purpose of this study is to evaluate how organizations can driving cost efficiency through the Implementation of Activity-Based Budgeting (ABB) mechanism in Nigeria. For this reason, the researcher used the following economic model to create a cost efficiency margin to perform an analysis of the comparability index procedures. The goal of this model is to provide quantitative dimensions for the influence of a variety of factors on cost optimization in the Nigerian economy

The Model is presented as follows:
The equation for the base model of the research may follows as:

Model 1: Cost Efficiency is a function of Activity Based Costing (ABC).

$$\boldsymbol{Cost\ Efficiency = f(ABC)}$$

$$\boldsymbol{CE_{it} = \beta_0 + \beta_1 ABC_{it} + \in_{it}} \quad \text{..... (1)}$$

Where $\boldsymbol{\beta_1} ABC_{it}$ the Activity Based Costing at time t, CE_{it} is the Cost Efficiency at time t, and $\in_{it}$ is an error term.

Model 2: Cost Efficiency is a function of Traditional Budgeting (TB).

$$\boldsymbol{Cost\ Efficiency = f(TB)}$$

$$\boldsymbol{CE_{it} = \beta_0 + \beta_1 TB_{it} + \in_{it}} \quad \text{..... (2)}$$

Where $\boldsymbol{\beta_1} TB_{it}$ the Traditional Budgeting at time t, CE_{it} is the Cost Efficiency at time t, and $\in_{it}$ is an error term.

Note: β_0, and β_1 are the parameters of the model, expressing the algebraic relationship's intercept and slope The intercept term indicates what the cost-effectiveness ratio would be if the ABC and TB were both zero.

Otherwise, the researcher might use a multiple regression model, which has one dependent variable that is a function of all other independent variables as follows:

$$\boldsymbol{CE_{it} = \beta_0 + \beta_1 ABC_{it} - \beta_1 TB_{it} + \in_{it}}$$

The study further decided to make a proposition in the following hypothetical assumption in order to depict the comparison between the Activity Based Costing and the Traditional Budgeting:

XYX Limited is a manufacturing business that develops and assembles automotive components, according to the report. Machining and Assembling are the two primary manufacturing areas at the organization. Each of the two departmental managers is responsible for preparing annual budgets that meet the management's goals. According to last year's budget, XYX Limited aimed to parlay a 10% increase in total revenue into a 20% increase in profits.

The following budgeted information are considered in this study to relates to XYX Limited for the forthcoming period:

Table B1: Budget Information

Descriptions	**Products**		
	ACQ	**BEZ**	**CFJ**
Sales and production (units)	30,000.00	50,000.00	40,000.00
	N	**N**	**N**
Selling price (per unit)	73.00	45.00	95.00
Prime cost (per unit)	65.00	32.00	84.00
	Hours	**Hours**	**Hours**
Machine Department (machine hours per unit)	4.00	2.00	5.00
Assembly Department (direct labour hours per unit)	2.00	7.00	3.00

Source: Research Computations 2021

Overheads are often re-analysed into 'cost pools' in this study as follows:

Table B2: Overhead Analysis

Cost pool	N'000	Cost driver	Quantity for the period
Machine services	359.00	Machine hours	425,000.00
Assembly services	328.00	Direct labour hours	532,000.00
Set-up costs	36.00	Set-ups	720.00
Order processing	165.00	Customer orders	34,000.00
Purchasing	88.00	Suppliers' orders	12,400.00
	976.00		

Source: Research Computations 2021

The study have also been provided with the following estimates for the period:

Table B3: Overhead Absorption Estimates

Descriptions	Products		
	ACQ	**BEZ**	**CFJ**
Number of set-ups	220.00	130.00	210.00
Customers' orders	18,000.00	10,000.00	10,000.00
Suppliers' orders	5,200.00	3,600.00	4,200.00

Source: Research Computations 2021

The study also assume that the overheads are absorbed on the basis of 'budgeted levels of activity' 110,000 units of the three products per period under Traditional Budgeting System.

The first study goal here looked at the extent to which using the Activity-Based Budgeting (ABB) Mechanism may improve organizational cost efficiency. Therefore, the study is required to prepare and present a profit statement using Activity-Based Costing (ABC) and Traditional Budgeting (TB) of XYX Limited. (Adopted from ICAN Nigeria)

Theoretical Calculations :

This study had investigated empirically, to what extent is using the Activity-Based Budgeting (ABB) Mechanism may improve organizational cost efficiency. The results for the descriptive calculations are as presented below.

Table C1: Profit Statement using ABC Methodology

XYX LIMITED

ACTIVITY BASED COSTING (ABC) PROFIT STATEMENTS				
Descriptions	**ACQ**	**BEZ**	**CFJ**	**Total**
Units produced/sold	30,000.00	50,000.00	40,000.00	120,000.00
	N'000	**N'000**	**N'000**	**N'000**
Sales	2,190.00	2,250.00	3,800.00	8,240.00
Less:				
Prime Cost	1,950.00	1,600.00	3,360.00	6,910.00
Overheads:				
Machine Services	101.36	84.47	168.94	354.78
Assembly Services	36.99	215.79	73.98	326.77
Set-up Costs	11.00	6.50	10.50	28.00
Oder Processing	87.35	48.53	48.53	184.41
Purchasing	36.90	25.55	29.81	92.26
	2,223.61	1,980.84	3,691.76	7,896.21
Profit/(Loss)	**(33.61)**	**269.16**	**108.24**	**343.79**

Source: Research Computations 2021

Research Computations on Activity Based Budgeting (ABB) :

Table C2: Calculate the rate/cost driver for each of the cost pools

Cost pool	**Cost**	**Quantity for the period**	**Rate/cost driver**	**Remarks**
	N	**Units**	**N**	
	(A)	**(B)**	**(C = A/B)**	
Machine services	359,000	425,000	0.845	Per machine hour
Assembly services	328,000	532,000	0.617	Per direct Labour hour
Set-up costs	36,000	720.00	50.000	Per set-up
Order processing	165,000	34,000	4.853	Per customer order
Purchasing	88,000	12,400	7.097	Per supplier's order

Source: Research Computations 2021

Table C3: Allocation of costs to different products (ABB)

Allocation of costs to different products (ABB)			
	ACQ	**BEZ**	**CFJ**
Units produced/sold	30,000.00	50,000.00	40,000.00
Machine services			
Machine hours/unit	4.00	2.00	5.00
Total machine hours	120,000.00	100,000.00	200,000.00
Cost at N0.845/hour	**101,364.71**	**84,470.59**	**168,941.18**
Assembly services			
Assembly hours/unit	2.00	7.00	3.00
Total assembly hours	60,000.00	350,000.00	120,000.00
Cost at N0.617/hour	**36,992.48**	**215,789.47**	**73,984.96**
No of set-ups	220.00	130.00	210.00
Cost at N50/set-up	**11,000.00**	**6,500.00**	**10,500.00**
No of customer orders	18,000.00	10,000.00	10,000.00
Cost at N4.853/hour	**87,352.94**	**48,529.41**	**48,529.41**
No of suppliers orders	5,200.00	3,600.00	4,200.00
Cost at N7.097/order	**36,903.23**	**25,548.39**	**29,806.45**

Source: Research Computations 2021

Table D1: Profit Statement using TB Methodology

XYX LIMITED				
TRADITIONAL BUDGETING (TB) PROFIT STATEMENTS				
	ACQ	**BEZ**	**CFJ**	**Total**
Units produced/sold	30,000.00	50,000.00	40,000.00	120,000.00
	N'000	**N'000**	**N'000**	**N'000**
Sales	2,190.00	2,250.00	3,800.00	8,240.00
Less:				
Prime Cost	1,950.00	1,600.00	3,360.00	6,910.00
Contributions	**240.00**	**650.00**	**440.00**	**1,330.00**
Overheads:				
Machine Services	97.91	163.18	130.55	391.64
Assembly Services	89.45	149.09	119.27	357.82

Set-up Costs	9.82	16.36	13.09	39.27
Oder Processing	45.00	75.00	60.00	180.00
Purchasing	24.00	40.00	32.00	96.00
Total Overheads	266.18	443.64	354.91	1,064.73
Profit/(Loss)	**(26.18)**	**206.36**	**85.09**	**265.27**

Source: Research Computations 2021

Research Computations on Traditional Budgeting (TB)

Table D2: Calculation of the Overhead absorption rate

Calculation of the Overhead absorption rate				
Cost pool	**Cost**	**Quantity for the period**	**Rate/cost driver**	**Remarks**
	N (A)	**Units (B)**	**N (C = A/B)**	
Machine services	359,000.00	110,000.00	3.26	Per machine hour
Assembly services	328,000.00	110,000.00	2.98	Per direct Labour hour
Set-up costs	36,000.00	110,000.00	0.33	Per set-up
Order processing	165,000.00	110,000.00	1.50	Per customer order
Purchasing	88,000.00	110,000.00	0.80	Per supplier's order

Source: Research Computations 2021

Table D3: Allocation of costs to different products (TB)

Allocation of costs to different products (TB)			
	ACQ	**BEZ**	**CFJ**
Units produced/sold	30,000.00	50,000.00	40,000.00
Machine services			
Machine hours/unit	3.26	3.26	3.26
Machine Services Cost	**97,909.09**	**163,181.82**	**130,545.45**
Assembly services			
Assembly hours/unit	2.98	2.98	2.98
Total Assembly Cost	**89,454.55**	**149,090.91**	**119,272.73**
No of set-ups	0.33	0.33	0.33
Cost at N0.33/set-up	**9,818.18**	**16,363.64**	**13,090.91**

No of customer orders	1.50	1.50	1.50
Total Cost at N1.5/unit	**45,000.00**	**75,000.00**	**60,000.00**
No of suppliers orders	0.80	0.80	0.80
Total Cost at N0.80/unit	**24,000.00**	**40,000.00**	**32,000.00**

Source: Research Computations 2021

4.0 Benefits of ABB :

- Costs are driven by activities. It may be expected that by identifying cost drivers, expenses that are directly due to an activity can be forecasted and tracked more effectively.
- Many expenditures in service cost centers and nonproduction departments are likely to be caused by actions outside the department's control. Activity levels become more obvious if cost drivers are identified. Maintenance requirements, for example, may vary depending on the age of the machinery and its amount of use. To create a budget, the maintenance manager would need estimates from the assembly manager.
- It would even be able to identify activities that don't contribute value, as well as their related expenditures, using activity-based budgeting. These expenses can then be cut from the budget.
- It compel managers to make a planning and prepare forward. ;
- It delivers resource information that can help you make better decisions that will ultimately optimize costs;
- It assists in the efficient use of resources and people by establishing a standard for future performance evaluations;
- It boosts cooperation and communication.

5.0 Results and discussions

Table E1: Analysis of result

Descriptions	Product **ACQ**		Product **BEZ**		Product **CFJ**		**Combined Products**	
	Overhead Costs	Profit/Loss	Overhead Costs	Profit/Loss	Overhead Costs	Profit/Loss	Total Overhead Costs	Total Profit/Loss
	₦	**₦**	**₦**	**₦**	**₦**	**₦**	**₦**	**₦**
ABB	273,613	(33,613)	380,838	269,162	331,762	108,238	986,213	343,787
TB	266,182	(26,182)	443,636	206,364	354,909	85,091	1,064,727	265,273
Differences	**7,432**	**(7,432)**	**(62,799)**	**62,799**	**(23,147)**	**23,147**	**(78,514)**	**78,514**
% Increase/Decrease	2.79%	28.38%	-14.16%	30.43%	-6.52%	27.20%	-7.37%	29.60%

Source: Research Computations 2021

From the data presentation on table 11 above, the situation of the activity-planned costs at the ABB level results as follows: total overhead costs = N986,213, Total profit = N343,787, while that of traditional budgeting results shows: total overhead costs = 1,064,727, and total profit = N265,273. The total overhead cost reduces with N78,514 (7.37%) with a corresponding increase in profitability by N78,514 (29.60%) as a result of the adoption of Activity-Based Budgeting system.

Again an analysis by product revealed that the total overhead cost of product BEZ reduces by N62,799 (14.16%) with a corresponding increase in profit of N62,799 (30.43%), Product CFJ's total overhead costs reduces by N23,147 (6.52%) with a corresponding increase in profit of N23,147 (27.20%), while that of product ACQ's total overhead increases by N7,432 (2.79%) with a corresponding increase in net loss of N7,432 (28.38%). The increase in the loss of product ACQ is as a result that it produced lower than the other two products and consumes the higher proportion of available machine hours, Number of set-ups, customer orders and suppliers' orders.

We can observed from the above analysis that the Activity-Based Budgeting technique provides real data on the amount of cost reductions determined by cost-cutting efforts, giving accountants a different view on cost classification and optimal usage. As a result, Activity-Based Budgeting helps to the manufacturing industry's efficiency of business entity performance.

5.1 Descriptive Analysis :

Table E2: Regression Statistics	
Multiple R	0.905665024
R Square	0.820229136
Adjusted R Square	0.460687407
Standard Error	0.211231478
Observations	4

Source: Research Computations 2021

The above gives the overall goodness-of-fit measures:

Our model accounts for around 82.02 percent of the variation in the dependent variable, as indicated by the R-squared value of 0.8202. Higher R-squared values are usually preferable.

Our regression model can explain roughly 46% of the variance in the dependent variable Y (CE) around the average value of the observations with an adjusted R Square of 0.46. (the mean of our sample). In other words, our model captures 46% of the variability in (y-hat, our dependent variable predictions).

Table E3:
ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	0.203579087	0.101789543	2.281318	0.423993944
Residual	1	0.044618737	0.044618737		
Total	3	0.248197824			

Source: Research Computations 2021

The entire F-test has a p-value of 0.423993944. This number is less than any tolerable degree of significance. The related P-value is in the significance F column. We do not reject H0 at the 0.05 significance level since 0.424 > 0.05.

As a result, we may infer that our regression model is statistically significant as a whole.

Table E4: Interpret Regression Coefficients :

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.129334	0.167546002	-0.771931259	0.58149	-2.25820781	1.99954	-2.2582078	1.9995398
ABC	-0.0663929	0.081987372	-0.809793694	0.56666	-1.10814119	0.975355	-1.1081412	0.9753555
TB	0.08812488	0.106534126	0.827198571	0.56003	-1.26551954	1.441769	-1.2655195	1.4417693

Source: Research Computations 2021

The coefficient for ABC is approximately -0.07. The negative sign indicates that as ABC increases, Cost also tends to decrease when compared with the TB. For every one-unit increase in TB Cost, Total Cost decreases by an average of 0.07 it would be for ABC.

The coefficient for the TB is 0.09. The positive sign indicates that as the TB Cost increases, Total Cost tends to Increase. There is a positive association between these two variables. For every one-unit increase in TB Cost, Total Cost Increase by an average of 0.09 degrees.

The coefficients' p-values show if the dependent variable is statistically significant. We can reject the null hypothesis that the coefficient equals zero when the p-value is less than our significance threshold. Ideally, there is no association if the value is zero.

The p-values for our two variables above are all larger than the 0.05 significance level. As a result, we reject the alternative hypothesis that the coefficient is not equal to zero (and accept the null hypothesis) and conclude that ABC and TB are both statistically insignificant!

The fitted line is, in a simple description of the above output, in the following:

CE = -0.1293 – 0.0664*ABC + 0.0881*TB

From the ANOVA table the F-test statistic is 2.281318 with p-value of 0.4239.

We do not reject the null hypothesis that the regression parameters are zero at significance level 0.05 since the p-value is not less than 0.05, and we conclude that the parameters are collectively statistically unimportant at significance level 0.05.

6.0 Conclusions and suggestions :

As a result of the numerical analysis above, Activity Based Budgeting is found to have influenced Organizations' behavior, using financial or nonfinancial measures, thus exceeding the functional limits resulting from the entity's division on functional bases, and attracting attention to the value areas resulting from the coherence of operations, regardless of functions.

The ability to calculate the value and costs analysis is one of the most obvious advantages of the ABB installation. The accurate determination of planned costs up to the extent of each activity is frequently noted in the case of every process. Assisting in establishing not just the customers' expectations and the work volume required to satisfy those demands at the entity's internal level, but also the differences at the top of the management period by comparing effective costs to planned expenses.

The assessment of the utilization level at a functional level (departments) and at the process level, giving management with a clear perspective of weak areas. As a result, the needed resources for each activity may be calculated, and extra resources are frequently employed or transferred to inadequate activities. Each process may also be designated a "process manager," who would be responsible for ensuring the success of the management of his operations and serving as a guarantee of efficient management.

Management accountants can utilize the information and data produced from a well implemented Activity Based Budgeting system to analyze trends, estimate and model in accordance with "What if..." scenarios. Information on all cost objects, cost inductors, essential amounts, and thus the degree of resources costs is frequently acquired by estimating the quantities and volumes on an indicated management period. In practice, Activity Based Budgeting may be a flexible budgeting method that considers more elements than projected production units or work volume, resulting in a more accurate prediction of current expenses and, as a result, the resources required by the business. However, the

following suggestions are made for effective ABB adoption:

i. Planning and comprehensive organizational education, resource allocation, a legal and regulatory support framework, and institutional backing with solid management systems are all required for effective ABB implementation.

ii. Adequate resources must be put in place to enable the long-term implementation of ABB. This entails forming consultative groups that can swiftly respond to user concerns and provide ongoing training. Assisting key stakeholders, notably managers, with training and having the appropriate resources to know and apply the requirements of ABB is a critical factor underpinning the efficient implementation of ABB.

iii. An essential component in the acceptance of ABB is continuous training of workers and other users. In reality, the accounting profession may be required to improve the capability of many stakeholders.

iv. Organizations are advised to identify main activities and assign overhead expenses to each activity based on the proportion of resources dedicated to that activity. Following the assignment of overhead expenses, cost drivers relevant to each cost pool are identified. The overhead expenses from each cost pool should then be allocated to each product line in accordance to the cost driver used by the product line.

7.0 Authors Contributions :

Muniru Haruna conducted the experiment, authored the article, created the XYZ Limited sample, and eventually came up with the original concept. He also contributed to the final version of the paper by developing the theoretical framework, performing the analytic calculations, and numerical simulations.

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