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An Evaluation of Standard costing In Manufacturing Industries in Nigeria

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Abstract: With increasing knowledge of the efficacy of traditional media, most communities especially in traditional societies are now leveraging on its application in diverse spheres. The present administration's asymmetric approach to national security which has necessitated the resort to self-help is why these Igbo speaking communities in Delta north are fighting the cataclysm of herdsmen invasion through their own local media. Since the people of this area have always recounted their history and current realities through their oral tradition in spite of modernization, faced by this trying situation which appears to be overwhelming the nation, they have to consider one way or another how the tranquillity and integrity of the communities have been preserved from time immemorial. Based on the foregoing, the study takes a critical look at the various strategies of this engagement and how it can be fused into the internet networks in order to widen the scope of its use. Ex- post facto research approach was used in interrogating the study, while the discourse is founded on the framework of Diffusion of Innovation theory.

Keywords: Media, tradition, security, policing, ICTs.

INTRODUCTION

An important feature of managing a business is controlling cost. Standard costing is one of the techniques used in cost control. It is aimed at the predetermination of what performance should be under specified conditions. Controlling cost involves providing clear out cost actually incurred, what is the variance between what was and what should have been, why and what remedial action should be taken to ensure that actual occurrence agree within the planned. Standard costing is a measure of comparism in quantity and qualitative terms. It is a normal reference point for evaluation of performance. It has been variously referred to as the preparation and the use of standard cost and measurement at the point of incidence Okoye (2000). Standard costing is concerned with measures of efficiency which describe how managers can have control over the acquisition and use of resources in producing a given quantity of output. The degree of success is measured by comparison of actual performance and standard performance.

The effect of standard costing on profitability has been a problem to manufacturing companies in Nigeria. The standard costing as a tool for either improving or not improving profitability. Unlike its contemporaries in the field of science, it deals with human being and calculation in generating significant information.

Standard costing as a technique which establishes predetermined cost estimates of the cost of products and services and then compares these predetermined cost with actual cost as they are incurred standard cost represent our estimated or predetermines total cost of product per unit for an organization.

Standard costing as a long established concept is the management function of planning a control. In effect, yard stick has been of vital impotence for planning and control exercise. As a matter of fact, problems associated with production and earning a profit was recognized for many years before the concept of standard costing was invented. Standard costing appeared in the early twentieth country when transaction volumes were overwhelming. The record keeping system in the use at the time. Since then, prevalent use of computer systems and automated data entry system have reduced the need for standard costing though not entirely eliminated.

Standard cost reveals goals, spur actions and efforts for effective management and equally provide checks such that exceptional profit oriental goal performance can be achieved and the reserve adequate punishment for bad performance. Standard cost cause appraisal to be made over production facilities and form management intentions and capabilities and is a first step strength and weakness appraisal. These led to the performance of standard costing system in 1920's. It was brought into the system such that total variance might be accumulated as well as detailed variance. These steps gave rise to formal expression that significant cost and historical were not actual.

In Nigeria today, the economy is extremely bad. In this respect, a lot of measures have been taken to arrest the deteriorating economic situation. Among the measures taken to revamp the economy includes Structural Adjustment Program (SAP) second tier

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foreign exchange measures has adverse effect on the buying attitude of the consumer. Cost of production has increased in manufacturing sector of the economy which in effect has resulted to high prices of manufactured product that are consumed by civil servants, public servants and other wage earners whose take home pay can no longer take them home. In this regard, consumers utilize their little purchasing power mainly on foodstuff to sustain themselves first, before luxury. Greater efforts should be made to keep cost to the lowest minimum through efficient and effective utilization of both human and material resources, and improve irregular supply of power, inadequate supply of water, bad road and foreign competition.

Shares value has decreased resulting from increased costs. In effect, a greater cost reduction is required to optimize profitability, this can only be achieved through setting reliable standard, ensuring that such standard are measured and variances not adversely very large.

The use of unqualified and inexperienced accountants by some industries pose greater problems to such industries because the accountant cannot adequately apply the accounting techniques required of them on standard costing.

Research Hypothesis

The above research questions are formulated in the cause of the study into hypothetical statements.

- H_o: The application of standard costing techniques has no effect on the profitability of manufacturing companies in Nigeria.
- H_o: Standard costing has no effect on performance evaluation of the manufacturing companies in Nigeria.
- H_o: The principle of standard costing and the standard costing techniques has not being adopted and practiced in Nigeria manufacturing companies.

The definition of standard costing as per the institute of chartered accounts official terminology is "a predetermined calculation of how cost should be under specific working conditions, it is build up from an assessment of the value of cost element and correlates technical specification and the qualification of materials, labour and other cost to prices and/or wages expected to apply during the period which the standard cost is expected to be used.

Standard costing is represented as integral part of management accounting control techniques which also includes budgeting system and responsibility accounting statement. According to him, standard costing technique may be either viewed from the perspective or marginal costing technique or absorption costing techniques, variance will be determined on the total relevant cost of product excluding fixed overhead. But if it is viewed in the context absorption costing, then variance analysis will involve the cost of product of the organization.

The basic steps involved in standard costing techniques include:

- Indentify the long-term corporate objective of a business outfit.
- Determine the short term achievable objective from the corporate objective.
- Conduct a market research to identity the needs of the consumers.
- Obtain top management support for standard costing technique.
- Design a particular product or services that will be used to satisfy the needs of the consumers.
- Identify the quantity as well as equally of raw materials required in producing a limit of a produce.
- Estimate normal loses in the course of production.
- Identify labour rate per hour together with standard hour required in producing a limit.
- Adopt a specific method of absorbing both variable and fixed production overhead into product costing.
- Prepare a standard cost care specifically itemizing the standard cost of production per unit.

Cost are classified under historical and actual or predetermine costs. Historical cost is concerned with the past while predetermine cost is concerned with future cost. Unlike predetermined costs, historical costs cannot be used in control mechanism if it is used as a standard for future operations and comparison, inefficiency will be perpetuated.

Equally, predetermined cost can be of great benefit to cost planning, coordination and control. The guidance and regulation of executive and actions of the cost of operating and undertaking which ensures that a target planned is achieved most effectively and efficiently.

The objective of standard costing includes:

- To provide a basis for estimating.
- To provide guidance on improving performance.
- To provide a formal basis for assessing performance and efficiency.
- To assist in setting standard.
- To control cost by establishing standards and analyzing variances.
- To enable the principle of management by exception to be practiced at the detailed operational level.
- To motivate staff and management.
- The standard cost can be used for stock and work in progress valuation profit planning and decision making.
- To assist in assigning responsibility for adverse variance or non-performance in order to correct deficiencies or to maximize the benefits associated with favourable variance.

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Features of Standard Costing

There are some essential features that are attributed to standard costing. This may include the following.

TYPES OF STANDARD

Ideal Standard

This may be describe as an established standard specifically designed on the basis of maximum productive capacity of the organization i.e. standard established without providing adequate for many negative factor that may inhibit the attainment of the standard. For example, labour standards established without the provision for lateness, absenteeism, industrialization, annual leave, maternity leave etc.

Attainable Standard

Also referred to as practice standard, this will represent an established standard specifically premised on what is considered practicable within the organization practical standard are established with adequate provision for negative factors that may affect the attainment of the establishment standard. For example in establishing products standards, adequate provision is given to ideal time or loss of production due to mechanic breakdown, loss of power, lack of raw material, repairs and maintenances etc.

This will be describe as an established standard specially based on the preventing working condition within the organization or the industry a large current standards are however subject on frequent changes in order to reflect the current position within the organization.

Basic Standard

This will represent an old established standard designed principally to satisfy given objective. Basic standard are not subjected to frequent alterations, therefore, out dated in nature.

Setting Standards

Lucy (2002), the realistic standards which can be useful for control purposed rest on a foundation of properly organized, standardized methods and procedures and a comprehensives information system. It is little point trying to develop a standard cost for a product if the production method is not decided upon. A standard cost implies that a target or standard exits for every single element which contributes to the product, the types, usage and prices of material and parts, the grades rates of pay and time for the labour involved, the production methods, the tools and jigs and so on. Considerable efforts are involved in establishing standard cost and keeping them up to date. The following paragraphs explain some of the detailed procedures involves in setting standards.

Material Standard

The material content of a product, raw material sub assemblies, piece parts finishing material etc is derived from technical and engineering specification, frequently in the form of bill materials. This standard quantities required normally include an allowance for normal and inevitable losses in the production, that is machinery losses, evaporation and expected level of breakages and rejections.

The process of analysis is valuable in itself because saving and alternative materials and ways of using material are frequently discovered. The responsibility for providing material prices is the of the buying department. The prices used are the past cost but the forecast expected cost for the relevant budget period, change in purchasing polices, quantity and cash discounts, carriage and packaging charge and any factor that will influence material costs.

Labour Standard

Without detailed operation and process specification, it would be impossible to established standard and labour times. The techniques of work measurement are involved, frequent combined with work study projections based elemental analysis when a part is not yet in production. The labour time involved. Planned labour to be used as well as the time involved. Planned labour tunes are expones in standard hours (or standard minutes). The concept of standard hour/minutes is important and is defined by Lucy (2002) as the quantity of work achievable as standard performance in an hour or minute. Once the time a grade labour is established, a forecast can be made of the relevant wage rate for the appropriate future periods. This is usually done by the personnel department.

Overhead Standard

These predetermined overhead absorption rate become the standard for overhead for each cost centre using the budgeting standard labour hours as the activity base. For realistic control, overheads must be analyzed into their fixed and variable components and separates absorption rates calculated for both fixed and variable overhead thus;

Standard Variable OAR =<u>Budgeted variable overhead for cost center</u>
Center budgeted standard labour hour for cost

Standard Fixed OAR =<u>Budgeted variable overhead for cost center</u>
Center budgeted standard labour hour for cost

The level of activity adopted, expressed in standard labour hours, is the budgeted expected annual activity level which is the basis of the master budget.

Revision of Standard

There is no doubt that standard which are right up to data provide a better target and are more useful for the foremen and managers concerned, but the extent and frequency of standard revision is a matter of judgement.

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Minor changes in rates, price and usage are frequently ignored for a time but their cumulative effect soon become significant and changes need to be made prior to compute maintained standard cost files standard cost revision were a time consuming chore as it was necessary to ensure that all the effect of a change were rescored for example, a change in the price of a common raw material which necessitate alteration to:

- The standard cost cards of all product, parts and assembles using the materials.
- Any price lists, stock sheets and catalogues involving the material and product derives for the material. Because of such factors, it is common practice for all standard cost to be revised together at regular, periodic intervals such as six or twelve such as six or twelve months, rather than or an individual, random basic.

The following is a simplified version of the layout of a standard cost card. An actual card would itemize the individual component in the product.

	Units	**Cost**
Materials	X	X
Labour	X	X
Overhead	X	X
Total	**X**	**X**

Accounting Variances

A cost variance is defined by Eze and Ani (2009) as the differences between the standard or budgeted cost and the comparable actual cost. The process by which the total difference between standard and actual cost is subdivided is known as variances analysis, which they defined as the analysis of performance by means of variances used to promote management action at the earlier possible stages.

Variance, therefore arise as a result of different between standard and actual prices, variances may be either favourable or adverse, minus or plus.

Variance Analysis

Variance analysis is defined by Ama (2001) as the process of analyzing the total differences between planned and actual performance into its constitutes parts variances analysis can also be define as a sign post which alerts management to the need for inquiry into cause of off standards results.

Material Cost Variance (MCV)

It is a principle material variance which occurs when the actual material cost is at variance from the standard material cost, in fact, it is the difference between the standard cost for material and actual material costs.

MCV = Actual cost – Standard cost
(AQ X AP) – (SQ – SP)

Where
AQ = Actual Quantity
AP = Actual Prices
SQ = Standard Quantity
SP = Standard Prices

Direct Material Price Variance (DMPV)

This is caused by paying a higher or lower price than the standard price set for material while the actual; quantity hold constant. In equation form, the material price variance is DMPV = (AP – SP) AQ

Direct Material Usage Variance (SMUV)

This is a principle variance. It occurs as a result of the difference between the actual wage pay and standard wage pay. DLV = (SH X SR) – (AH X AR

Direct Labour Rate Variance (DLRV)

This is caused by paying a higher or lower rate to pay standard to produce a product or complete process. The direct labour rate variance is compute by multiplying the differences between the actual direct hour rate paid (AR) and the standard direct labour rate allowed (SR) by the hours of direct labour services required (AH) in equation form, Direct labour rate variance is
DLRV = (AR – SR) AH

Direct Labour Efficiency Variance (DLEV)

It is caused by using more or less than the standard amount of direct labour hours to produce a product or complete a process. The direct labour efficiency variance is computed by multiplying the difference between the actual direct labour hours required (AH) and the standard direct labour allowed (SH) by the standard direct labour hour rate per hour (SR) in equation from DLEV = (AH – SH) SR

Variable Overhead Expenditure Variance

It is the difference between the actual variable overheads incurred and the allowed variable overheads on the actual hours worked.
VOEV = actual variable overheads – (actual labour hour x overhead absorption rate)

Variable Overhead Efficiency Variable

This is the difference between the allowed variance overhead and the absorbed variable overhead.
VOEV = (Actual labour hours – standard labour hours) x variable overhead expenditure rate.

Fixed Overhead Expenditure Variance

This is the differences between the actual fixed expenditure attributed and changed to a particular production period and the budget cost allowance for that production period. Alternatively, it is the difference between actual fixed overhead and allowed or budgeted fixed overheads. Fixed overhead expenditure variance = variable overhead x) actual labour hour x variable overhead absorption rate).

Fixed Overhead Efficiency Variance

This is part of the fixed production overhead volume variance. It is the difference between the actual direct labour hours worked times by the standard hairly absorption rate, and the standard cost absorbed in the production accomplished fixed overhead efficiency

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variance = actual labour hours – standard labour hours x variable absorption rate.

Fixed Overhead Capacity Variance

This part of the fixed production overhead volume variance. It is the difference between the actual direct labour hour worked times by the standard hourly absorption rate at the budgeted cost allowance for the period.

Fixed overhead capacity variance = actual hours x fixed overhead absorption rate) – budgeted expenditure.

Advantage of Standard Costing

Acts as a Yardstick: Standard cost act as a yard stock against actual are compared with standard costs. This means that standard costing provides basis whereby performance may be measured on the basis of what product to produce, how much quantity to use and the expected level of activity which are compared with the actual result obtained.

Provides a Basis for Regular Cheeks on Expenditure Incurred: This provides a basis for regular checks and control materials, price usage labour costs and overhead expenditure.

Provides Quickly and Reality Available Reports for Management Decision: The provision of record makes the interpretation of management reports easier and thereby providing quickly and reality necessarily information for management actions.

Cost Control and Cost Reduction: By comparing actual cost and standard cost, cost can be controlled and reduced through constant monitoring measure and comparing results.

Performance Measurement: This is a recognizable method of monitoring and appraising performance through variance analysis causes of shortfall and improving method and procedures for the future.

Areas Where Standard Costing Improve Profitability in Manufacturing Companies in Nigeria

- Cost reduction and cost control
- Pricing
- Stock valuation
- Salary valuation
- Cost estimation
- Measurement of profits
- Business planning

Cost Reducing and Cost Control

Through standard costing, managers make effort to monitor, evaluate and time expenditure. These effort might be part of a formal, company-wide program or might be informal in nature and limited to a single individual or department. In either case, however, cost control is a particularly important area of focus for small business which often have limited amount of time and money, in small businesses, the focus is often on selling side tracked for items like fixed supplies, telephone bills or overnight delivery service can add up for small business, on the plus side, there minor expenditure can often provide source of cost saving thereby improviding profitability.

Pricing

Fixed product prices is fraught with difficulties but much reliance is placed on cost as basis for pricing especially when the product demand is elastics. Cost alone does not determine selling prices. Competitions often determine prices so that the main task of a manufacturer is to control costs. There should be based on cost, but with necessary adjustment made tool allow for market condition. In many field where contract works are involved the estimated cost is often the only information available on which to base prices many jobbing and contract businesses are relatively unaccepted, the customer accepts on the work is done. There is a distinct relationship between cost and price bug the extent of this will be determined by the circumstance and the length of period bring considered. This form of pricing gives the greater flexibility. The pricing executive has more attitudes and can estimates the price and volume which maximum profits.

Stock Valuation

There is the desire to show the true and far view of the operations for a particular year in teams of profit and changing the basis of valuing stock of raw material or work in progress can affect figures shown for profit. There is a general agreement that once the most suitable method of valuing stock has been determined, it should be used consistently, and then much work can be avaded by valuing the stocks at these values. A further advantages is that material stock can in regarded in terms of quantities only. This can result in clerical saving and speedier postings to the stock records. Actual cost are not typical and less clerical in involved when standard values are used

Salary Valuation

A salary scale has positive link with the standard costing system and therefore, standard cost supervisors are paid for the authority and responsibility required to control a portion of the company's money in form of a wages, material and manufacturing expenses. In this respect recommended that job evaluation should be used. Job values would be determined by the reference to controllable cost and a bonus them paid to be efficiency achieved in controlling these.

Cost Estimation

The use of standard cost greatly facilities estimating for new products. When standard cost are installed, a through analysis of all operation is necessary and this result to greater accuracy. One of the earliest

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uses of cost accounting was to provided figures for estimating prices. This is one of the most important functions cost have to be predetermined for raw materials, equipment usage and labour time, standard cost can be extremely useful for the estimating of controls. When using predetermined cost of any kind a manager should be made aware of their nature and limitations of not there is a real danger that losses will be made by quoting unrealistic prices

Presentation of Data

Table 1. Gender Distribution of the Respondents

Gender	Frequency	Percentage
Male	70	73.7%
Female	25	26.35%
Total	**95**	**100%**

Source: Field Survey 2021

The above table reveals that out of ninety-five respondents seventy (70) respondents which represent 26.3% were female. By implication male respondents were more than female respondents by 47.4%.

Table 2. Age Distribution

Age	Frequency	Percentage
18-30	10	10.5%
31-40	15	15.8%
41-50	20	21.1%
51-above	50	52.6%
Total	**95**	**100%**

Source: Field Survey 2021

The table above shows the respondents whose age bracket falls between 18-30yrs were ten (10) which represent 10.5%. This is followed by those with the age bracket of 31-40yrs with fifteen (15) which represent 15.8%. Also those within the age bracket of 41-50yrs were twenty (20) which represent 52.6%. By implication most of our respondents fall within the age bracket of adult men and women.

Table 3. Marital Status

Status	Frequency	Percentage
Married	70	73.7%
Single	25	26.35%
Total	**95**	**100%**

Source: Field Survey 2021

The above table reveals that out of ninety-five respondents seventy (70) respondents which represent 73.7% were married. While twenty-five (25) respondents which represents 26.3% were single. This therefore implies we have more married men and women in our survey.

Table 4. Educational Qualification

Qualification	Frequency	Percentage
WAEC/NECO	-	-
B.Sc/HND	46	48
M.Sc/MB.S	39	41
Ph.D	10	10.5
TOTAL	**95**	**100%**

Source: Field Survey 2021

From the table above (46) respondents which represent 48.4% shows that they are B.Sc/HND holder while (39) respondents maintain that they are M.Sc/MBA holder followed by ten people which present 10.5% has the Ph.D. Lastly WACE/NECO was not ticked.

Table 5. Professional Distribution of Staff

Options	Frequency	Percentage
Manager	15	15.9
Accountant	20	21
Auditor	20	21
Hop	20	21
Marketing Manager	20	21
TOTAL	**95**	**100%**

Source: Field Survey 2021

From the table above it was observed that 15 respondents which represents 15.9 were managers, this is because most of the managers where not seen at the time of the study. Accountants were twenty (20) which represents 21%. This is applicable to auditor and HOP has the same frequency and percentage with accountants.

Data Analysis

Question 1: Does your company keep accounting records

Table 5. Showing responses from question one

Option	Frequency	Percentage
Yes	95	100
No	-	-
TOTAL	**95**	**100%**

Source: Field Survey 2021

From the table above it was observed that all the respondents agree that their company keep accounting records.

Question 2: Does your company employ standard costing useful in your company?

Table 6. shows responses from question two

Option	Frequency	Percentage
Yes	95	100
No	-	-
TOTAL	**95**	**100%**

Source: Field Survey 2021

From the analysis above, it was observed that ninety-five (95) respondents which represents 100% agree that their company employ standard costing techniques.

Question 3: Do you consider the use of standard costing

Table 7 shows responses from question three

Option	Frequency	Percentage
Strongly agree	72	75.9
Agree	23	24.1
Strongly disagree	-	-
Disagree	-	-
Undecided	-	-
TOTAL	**95**	**100%**

Source: Field Survey 2021

Table 7 above shows that out of ninety-five (95) respondents 72 which represents 75.9% strongly agreed that they found standard costing useful in their company. While twenty-three (23) respondents which represent 24.1 agreed that standard costing has been useful in their company.

Question 4: Are stock valued at standard costs?

Table 8. shows responses from question 4

Option	Frequency	Percentage
Yes	90	94.7%
No	5	5.3%
TOTAL	**95**	**100%**

Source: Field Survey 2021

From the table above we observed that ninety (90) respondents which represents 94.7 were of the opinion that stock are valued at standard cost, while five (5) respondent which represents 5.3% maintain that stock are not value at standard cost.

Question 5: Does the application of standard costing technique have any effect on the profitability of manufacturing companies relating to your company?

Table 9. Shows responses from question 9

Option	Frequency	Percentage
Strongly agree	63	66.3
Agree	18	18.9
Strongly disagree	9	9.5
Disagree	3	3.2
Undecided	2	2.1
TOTAL	**95**	**100%**

Source: Field Survey 2021

From the above table if was observed that sixty three (63) respondents which respondents 66.3% strongly agree that application of standard costing technique have effect on the profitability of their company followed by eighteen (18) respondents which represent 18.9% was of the opinion that application of the standard costing have effect on the profitability of manufacturing companies relating to their company. Also nine (9) respondents which represent 9.5% strongly disagreed on this notion. While three (3) people also disagreed on the notion that application of standard of costing technique have an effect on the profitability of manufacturing company. Lastly two (2) respondents which represent 2.1% where undecided as to whether the application of standard costing technique have any effect on the profitability of manufacturing companies relating to their company.

Question 6: Do you agree that the principle of standard costing and standard costing technique are being adopted and practiced in Nigeria manufacturing companies?

Table 10. Shows responses from question 6

Option	Frequency	Percentage
Strongly agree	54	56.8
Agree	12	12.6
Strongly disagree	14	14.7
Disagree	10	10.5
Undecided	5	5.4
TOTAL	**95**	**100%**

Source: Field Survey 2021

From question 6, information shows that fifty-four (54) respondents which represents 56.8% strongly agreed that the principle of standard costing and standard costing technique are been adopted and practices in Nigeria manufacturing companies. Also followed by twelve (12) respondents which represent 12.6% agreed. Followed by fourteen (14) respondents which represents 14.7% strongly disagreed that the principle of standard costing and standard costing technique were not adopted and not practice in Nigeria manufacturing industry equally ten (10) people which represents 10.5% also disagreed. Lastly five (5) respondents which represents 5.4% where undecided on the question.

Question 7: Are the decision made in four company made through the use of standard costing.

Table 11. Showing responses from question 74

Option	Frequency	Percentage
Yes	83	87.4
No	12	12.6
TOTAL	**95**	**100%**

Source: Field Survey 2021

From the table above, it was observed that eight three (83) which represents 87.4% agreed that most of the decision taken in their company are done through the use of standard costing while twelve (12) respondents which represents 12.6 disagreed that the decision taken in their organization are not through the use of standard costing.

Table 12. Shows responses from question 8

Option	Frequency	Percentage
Strongly agree	44	46.3
Agree	23	24.2
Strongly disagree	12	12.6
Disagree	7	9.5
Undecided	9	9.5
TOTAL	**95**	**100%**

Source: Field Survey 2021

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From the table above it was observed that forty-four (44) respondents which represents 4.3% strongly agreed that standard costing has effect on performance evaluation of the manufacturing companies. Also twenty-three (23) respondents which represents 24.2% agreed that standard costing has effect on performance evaluation of the manufacturing companies in Nigeria. Twelve 12 respondents which represents 12.6% strongly disagreed that standard costing does not have any effect on performance evaluation of the manufacturing companies in Nigeria. Seven (7) respondents which represents 7.4 also disagreed. Lastly, nine (9) respondents which represents 9.5% were undecided.

Test of Hypotheses

The stated hypotheses for this study are hereby tested using chi-square tool for inferential statistical analysis. Here the criteria for decision as regards the acceptance or otherwise of the hypothesis is that if the calculated value of the chi-square at 5% significant level is greater than chi-square critical value, the null hypothesis will be rejected while the alternative hypothesis will be accepted.

Hypothesis One:

H_o: The application of standard costing techniques has no effect on the profitability of manufacturing companies in Nigeria.

Chi-square formula

$$X^2\ \Sigma\frac{(O-\Sigma^2)}{E}$$

Where:

O = Observed frequency in each category

Σ = Expected frequency in corresponding category

Df = Degree of frequency

X^2 = Chi-square

Table 13. Computation of Chi-square

Option	O	Σ	O - Σ	(O -Σ)^2	(O - Σ)^2/Σ
Strongly Agree	63	19	44	1936	101.9
Agree	18	19	1	1	0.0
Strongly Disagree	9	19	10	100	5.3
Disagree	3	19	16	226	13.5
Undecided	3	19	17	289	15.2
					X^2 = 136

Source: Field Survey 2021

Degree of freedom (Df) n – 1, 5 – 1 = 4

At 5 percent level of significance, the tabulated value of chi-square is (9-5) while the calculated valued is (136) since the calculated value is greater than the table value (136>9.5) we reject the null (H_o) hypothesis and accept the alternative (H_I) hypothesis which implies that the application of standard costing has effect on the profitability of the manufacturing companies in Nigeria.

Hypothesis Two:

H_o: Standard costing has no effect on performance evaluation of the manufacturing companies in Nigeria.

H_I: Standard costing has effect on performance evaluation of the manufacturing companies in Nigeria.

Question 8: Does standard costing has effect on performance evaluation of the manufacturing companies in Nigeria.

Chi-square formula

$$X^2\ \Sigma\frac{(O-\Sigma^2)}{E}$$

Table 14. Computation of Chi-square

Option	O	Σ	O - Σ	(O - Σ)^2	(O - Σ)^2/Σ
Strongly Agree	44	19	25	625	32.9
Agree	23	19	4	16	0.8
Strongly Disagree	12	19	7	49	2.6
Disagree	7	19	12	144	7.5
Undecided	9	19	10	100	5.7
					X^2 = 49.5

Source: Field Survey 2021

Degree of freedom (Df) n – 1, 5 – 1 = 4

At 5 percent level of significance, the tabulated value of chi-square is (9-5) while the calculated valued is (49.5). Since the calculated value is greater than the table value 5% level of significance, we reject the null (H_o) hypothesis and accept the alternative (H_I) hypothesis which says that standard costing has effect on performance evaluation of the manufacturing companies in Nigeria.

Hypothesis Three:

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H_o: The principle of standard costing and the standard costing technique has not being adopted and practiced in Nigeria manufacturing companies.
H_I: The principle of standard costing and the standard costing technique has being adopted and practiced in Nigeria manufacturing companies.

Question 6: Do you agree that the principle of standard costing and standard costing techniques are being adopted and practice in Nigeria manufacturing companies.
Chi-square formula

$$X^2\ \Sigma\frac{(O-\Sigma^2)}{E}$$

Table 15. Computation of Chi-square

Option	O	Σ	O - Σ	(O -Σ)^2	(O - Σ)^2/Σ
Strongly Agree	54	19	35	1225	64.5
Agree	12	19	7	49	2.6
Strongly Disagree	14	19	5	25	1.3
Disagree	10	19	9	81	4.3
Undecided	5	19	14	196	10.3
					X^2 = 83

Source: Field Survey 2021
Degree of freedom (Df) n – 1, 5 – 1 = 4

At 5 percent level of significance, the tabulated value of chi-square is (9-5) while the calculated valued is (83). Since the calculated value is greater than the table value at 5% level of significance, we reject the null (H_o) hypothesis and accept the alternative (H_I) hypothesis which says that the principle of standard costing and the standard costing technique has being adopted and practice in Nigeria manufacturing companies.

CONCLUSION

Having examined in details the effect of standard costing on the profitability of manufacturing companies one can conclude that standard costing is extremely necessary in every manufacturing company in Nigeria. If the principle and techniques of standard costing is being adopted and practiced in Nigeria manufacturing companies, it serves as a tool for improvement of profit, this is so because it enhances adequate planning, control and decision making process in the company.

It should be noted that there is need to keep proper accounting records in a company so as to measure the extent to which standard costing improves profitability.

The finding of this research shows that when the principle and techniques of standard costing are consistently applied in the company, it aids in the decision making process of the management, help in achieving greater profit, it extremely helps in the elimination of unprofitable products and also strengthens the relationship between standard costing and profitability in manufacturing companies.

It can be also rightly concluded based on the findings of this research that the application of standard costing have greater effect on the profitability of manufacturing companies and that the principle of standard costing and standard costing techniques are being adopted and practiced in Nigeria manufacturing companies. This is consistent with the literature received.

Recommendations

Based on the significance and findings of this work, the following recommendations are put forward;

- That the company should provide a cost unit to take the responsibility of standard costing.
- That the cost unit should exclusively be responsible for providing standard costing information in the company.
- That the managers who object to standard costing should be educated on the relevance of standard costing to the company.
- Adherence to the standard costing information should be practiced by the top management as it is a tool for the improvement of profit in the company as concluded in this chapter.
- Since standard costing help in profit improvement the researcher recommends the employment of more qualified cost accountant so that comparative analysis of different costing techniques will be assured.

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