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APPLICATION OF COST CONTROL PRINCILPES IN MEDIUM SCALE INDUSTRIES: THE NIGERIAN EXPERIENCE

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Abstract
The study examined the application of cost control principles in medium scale industries with emphasis on Innoson Technical Industries Nigeria Limited, Emene, Enugu. Primary data were gathered with the aid of a 12 question – item structured questionnaire. The instrument of data collection was a modified 4-point Likert Scale with answer options of strongly agree (4), agree (3), disagree (2) and strongly agree (1). Data were collected from 40 staff of the company, comprising Management cadre and Accountants. Research questions were analysed with aid of mean and standard deviation while hypotheses were tested with Chi-square statistical tool. The study found that standard costing plays a significant role in cost control in medium scale industries in Nigeria, among others. The implication of this finding is that medium scale industries in Nigeria can apply standard costing principles in their manufacturing processes to keep their production cost low so as to maximize their profits. It was concluded that both standard costing and budgeting can be used for cost control purposes in medium scale industries in Nigeria. The study therefore, recommended the application of both standard costing and budgeting in medium scale industries to control their production cost and make their products affordable to customers.

1.0 Introduction

Prices of goods and services are gradually increasing day by day, and due to the fact that sole aim of a businessman, producer or manufacturer is to make profit they end up making use of low quality materials for production so as to reduce cost of production and maximize profit. Moreover, with the increase of competitors around, most of the producers have thought it wise to manufacture

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or package a quality product and also enhance their profit level.

In the past, accountants' concentrated attention on workers capacity, usually separated from the managers for whom they provided reports and information for managerial decision making. But with increasing sophistication in technology and diverse forms of competition among business outfits, accountants' role in organizations keep changing. He even works now in cross functional team with managers from all sectors of the organization.

However, the management face broad array of decisions including production, marketing, financial and other relevant decisions. Also having in mind that decision making is a fundamental part of management; the accountants must be equipped with some knowledge of accounts and management. He must have an understanding and knowledge of environment and the operations of the organization in which those systems are implemented and appropriate technology to apply in each case for the provision of management information.

It is obvious that the management of a manufacturing firm will need information that will enable them consider the factors affecting cost of production, cost reduction, product pricing and investment, etc, so as to choose the best alternative. How to provide the required information in the presence of rapidly changing technological and corporate competitiveness becomes a huge challenge. Many directors of organizations look up to their accountants not just for various cost control measures that will enable them compete favourably but also reduce their production cost to accommodate competition- induced price reduction of their products in order to maintain a desired market share.

The peculiarity of many production lines appear not to be friendly to accountants in this onerous responsibility. He must understand the essentials of each production line to be able to offer reasonable and safe cost control measures that will not be counter- productive in the final analysis.

1.2 Statement of Problem

In recent years, the cost of products manufactured in Nigeria has been very expensive beyond the reach of common Nigerians. The cost challenges have made many products manufactured in the country not to be patronized by consumers, and as a result of that it expires in the hands of the sellers. There is also a problem of poor inventory management which leads to overstocking thereby tying down the company's working capital. Another problem facing some or most of the manufacturing firm is the absence of proper plan to reduce cost of production so as to maximize profit, i.e. (making use of low quality raw materials)

Accountants are most of the time charged with managing cost elements of products among other numerous responsibilities. In line with the above expectation, he is expected ensure cost efficiency; provide required information for cost minimization so that profit could be maximized. These responsibilities ought to reduce product pricing, but instead, there have been a consistent product price fluctuation.

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There is no gainsaying that unstable product pricing policy endangers customer loyalty and patronage which are key elements in corporate growth. These problems therefore underline the need for this study.

1.3 Objectives of the Study

The general objective of the study is to examine the application of cost control principles in medium scale industries in Nigeria with emphasis on Innoson Technical Industries Nigeria Limited. The specific objectives are to:

1. Determine the role of standard costing in cost control in Innoson Technical Industries Nigeria Limited Enugu.
2. Ascertain the role of budgeting in cost control in Innoson Technical Industries Nigeria Limited Enugu.

1.4 Research Hypotheses

The under-stated hypotheses were tested in the course of the study:

HO_1: Standard costing does not play a significant role in cost control in Innoson Technical Industries Nigeria Limited.

HO_2: Budgeting does not play significant role in cost control in Innoson Technical Industries Nigeria Limited.

2.0 Review of Related Literature

2.1 Conceptual Review

2.1.1 Cost Control

The Chartered Institute of Management Accountants (CIMA), London defines cost control as: 'The regulation by executive action of the cost of operating an undertaking particularly where such action is guided by cost-accounting.' Cost control aims at reducing inefficiencies and wastages and setting up predetermined costs and achieving them. In other words, cost control is compelling actual costs to confirm to planned costs. The cost control is the function of keeping costs within prescribed limits.

A cost is a sacrifice of resources. When we buy one thing, we give up (sacrifice) the ability to use these resources (typically cash or a line of credit) to buy something else. The price of each item measures the sacrifice we must make to acquire it. Whether we pay cash or use another asset, whether we pay now or later (by using a credit card), the cost of the item acquired is represented by what we forgo as a result.

Seal (2006) refers cost control as the planned or budgeted cost by systematic approach or techniques; cost should be monitored as well. It is one of the methods or techniques of improving profitability. It also refers cost control as the regulation of the cost of operating a business and is concerned with keeping cost to its acceptable limits. It is a practice of managing or reducing business expenses.

According to Carr and Ng (1995), cost control is the practice of identifying and reducing business expenses to increase profits, and it starts with the budgeting process. A business owner compares the company's actual financial results with the budgeted expectations, and if actual costs are higher than planned, management has the information it needs to take action. As an example, a company can obtain bids from different vendors that provide the same product or service, which can lower costs. Cost control is an important factor in maintaining and growing profitability.

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Ibrahim (2007) says that cost control is the process of monitoring and regulating the expenditure of funds. It involves setting targets and standards, ascertaining the actual performance, comparing the actual performance with standard, investigating the variances and taking corrective action. It aims in achieving standard; it is a preventive function in the company, costs are optimized before they are incurred. It is generally applicable to items which have standards. It contains guidelines and directive management such as how to do things.

In our own view, cost control is the totality of all measures applied to keep expenditure of funds within realistic boundaries. It includes both accounting principles and natural virtues. Accounting principles include but are not limited to standard costing, budgeting. The accounting principles are easier to be implemented and monitored. Natural virtues include truthfulness and honesty. In some circumstances when accounting principles fail, reliance can be placed on natural virtues if present. Unfortunately, not many possess these virtues. Take for instance, where the price of a material falls below the predetermined price, many purchasing managers may be comfortable to report any price within the predetermined range. It will require the virtue of honesty to report the actual price of the material.

2.1.2 Standard Costing

According to Karamanuo and Vafeas (2005), standard costs are predetermined costs. A standard costing system can be applied to organizations that produce many different products as long as production consists of a series of common operations. For example, if the output from a factory is the result of a given common operations, it is therefore possible that a large product range may result from a small number of common operation. This standard costs should be developed for respective operations and product. Standard costs are simply derived by combining the standard cost from operations which are necessary to make the product. Standard costing is a system of accounting which is used in determining the standard cost relating to each element of costs material, labour and overhead for each line of product manufactured or service supplied.

According to Brown (2006), a standard is a predicted measurement of what amount of input should be and what that input should be and what that input should cost per unit of that input. A standard should be reasonable in that it should be attainable by skilled and motivated workers and should also enable the company to produce a product that is high enough in quality and low enough in cost so as to meet the demands of competitive market. It is a tool used by management for cost planning and cost control purpose. When a company uses standard cost, all costs affecting the investor accounts and the cost of goods sold accounts are stated in terms of practice, five standards are usually predetermined for the product of a manufacturing company.

2.1.3 Budgeting

A budget is an expression of a firm's plan in financial form and budgetary control is a technique applied to the control of total

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expenditure on materials, wages and overhead by comparing actual performance with planned performance. Thus, in addition to its use in planning, the budget is also used for control and co-ordination of business operation.

According to Brown (2006), a budget is a pre-determination statement of management policy which provides for comparison of results actually achieved during a given period. It is a financial or quantitative plan of operation for a forth coming accounting year.

Lucey (2007) states that a budget is a statement or financial statement of a sovereign body for a definite period of time based on detained estimates of planned or expected expenditure during the period and proposal for financial them.

CIMA defines budget as a financial or a quantitative statement prepared and approved prior to a definite period of the policy of attaining a given objective. It may include expenditure and the employment of capital monetary terms prepared and approved prior to a defined period of time usually showing planned income to be generated and expenditure to be employed to attain a given objective.

2.2 Theoretical Review

2.2.1 Traditional Theory of Costs

According to Casson (1994), the traditional theory of costs analyses the behaviour of cost curves in the short-run and long-run and arrives at the conclusion that both the short-run and long-run cost curves are U-shaped but the long-run cost curves are flatter than short-run cost curves.

In the traditional theory of the firm, in the short run, there are variable inputs and at least one fixed input. This suggests that short run costs are divided into fixed costs and variable costs. Thus, there are three concepts of total cost in the short run: Total fixed costs (TFC), total variable costs (TVC), and total costs (TC). TC = TFC + TVC (Lucas. 1967).

These are costs of production that do not change (vary) with the level of output, and they are incurred whether the firm is producing or not. They are independent of the level of output and it is the sum of all costs incurred by the firm for fixed inputs, and it is always the same at any level of output. It includes; (a) salaries of administrative staff (b) depreciation (wear and tear) of machinery (c) expenses for building depreciation and repairs (d) expenses for land maintenance and depreciation (if any). Another element that may be treated in the same way as fixed costs is the normal profit, which a lump sum including a percentage return on is fixed capital and allowance for risk. Total Fixed Cost (TFC) is graphically denoted by a straight line parallel to the output axis (Casson, 1994).

These are costs of production that change directly with output. They rise when output increases and fall when output declines. They include (a) the raw materials (b) the cost of direct labour (c) the running expenses of fixed capital, such as fuel, ordinary repairs and routine maintenance. It is the total cost incurred by the firm for variable inputs. In the traditional theory of the firm, the total variable cost (TVC) has an inverse-S-shape.

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The firm's short run total cost is the sum of the total fixed cost (TFC) and total variable cost (TVC) at any given level of output. Total cost also varies with the level of the firm's output. TC = TFC + TVC.

According to the law of variable proportions, at the initial stage of production with a given plant, as more of the variable factor(s) is employed; its productivity increases and the average variable cost fall. This continues until the optimal combination of the fixed and variable factors is reached.

2.2.2 Modern Theory of Cost

As early as 1946, George Stigler suggested that the short-run average variable cost has a flat stretch over a range of output which reflects the fact that firms build plant with some flexibility in their productive capacity. The reasons for this reserve capacity have been discussed in detail by various economists. The shape of the long run cost curve has attracted greater attention in economic literature, due to the serious policy implication of the economies of large scale production. (Stigler, 1946). The modern theory of cost differs from the traditional theory of costs with regards to the shapes of the cost curves.

The U-shaped cost curves of the traditional theory have been questioned by various writers both on theoretical, a priori, and on empirical grounds (Dewett & Chand, 1997).

Several reasons have been put forward to explain why the long-run cost curve is L-shaped rather than U-shaped. It has been argued that managerial diseconomies can be avoided by the improved methods of modern management science, and when they appear (at a very large scale of output) they are insignificant relative to the technical (production) economies of large plants, so that the total costs per unit of output falls, at least over the scales which have been operated in the real industrial world. Like the traditional theory, modern microeconomics distinguishes between short run and long run costs (Stigler, 1946).

As in the traditional theory, short-run costs in the modern theory of costs are distinguished into short-run average fixed cost (AFC), short-run average variable cost (SAVC), short-run average cost (SAC), and short-run marginal cost curves (SMC). As usual, they are derived from the total cost which is divided into fixed cost and total variable cost. But in the modern theory, the SAVC and SMC curves have a saucer-type shape or bowl- shape rather than a U-shape. As the AFC curve is a rectangular hyperbola, the SAC curve has a U-shape even in the modern theory (Leland, 1972).

This is the cost of indirect factors; it is the cost of the physical and personal organizations of the firm. The fixed cost include cost for (a) salaries and other expenses of administrative staff (b) salaries of staff involved directly in production but paid on a fixed term basis (c.) the wear and tear of machinery (standard depreciation allowance (d.) the expenses for maintenance of buildings (e.) the expenses for the maintenance of land on which the plant is installed and operated (Leland, 1972).

The planning of the plant (or the firm) consists of deciding the size of the fixed and indirect factors which determine the size of the plant, because they set limits to its production

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capacity. Direct factors such as labour and raw materials are assumed not to set limit on size; the firm can acquire them easily from the market without any time lag. Technology usually makes it necessary to build into the plant some reserve capacity.

As in the traditional theory, the average variable cost of modern microeconomics includes the cost of: a.) direct labour which varies with output; b.) raw materials; c.) running expenses of machinery. The short-run average cost curve (SAVC) in modern theory has a saucer-type shape, that is, it is broadly U-shaped but has a flat stretch over a range of output. The flat stretch corresponds to the built-in plant reserve capacity. With better skills, the wastes in raw materials are also being reduced and a better utilization of the whole plant is reached (Leland, 1972).

The average total cost is obtained by fixed (inclusive of the normal profit) and the average variable cost at each level of output. The ATC curves fall continuously up to the level of output (Q2) at which the reserve capacity is exhausted. Beyond that level, ATC will start rising. The MC will intersect the ATC Curve at its minimum point (which occurs to the right of the level of output QA, at which the flat stretch of the AVC ends).

2.4 Empirical Review

Maliah, Nik and Norhayati (2005) carried out a study that aims to provide empirical evidence on the extent to which companies in Malaysia use standard costing. It also examines the differences in the use of such techniques between local Malaysian firms and Japanese affiliates from the industrial and consumer products sectors listed on the Kuala Lumpur Stock Exchange and 21 Japanese affiliates in Malaysia, 66 companies were surveyed. The questionnaire, adapted from Drury et al. (1993), is part of a larger survey examining the management accounting practices of Malaysian companies; it was sent to 162 local Malaysian companies listed on the main board of the Kuala Lumpur Stock Exchange (KLSE). The empirical findings suggest that standard costing is still being used by a large majority of firms in Malaysia.

Dezoysa and Herath (2007) looked at standard costing in Japanese firms. The purpose was to review literature on standard costing in Japanese manufacturing environment. It examines the changes in the manufacturing environment in Japan that has lowered the significance of standard costing in Japanese firms and investigates the current level of its applicability in Japanese firms. The study systematically categorizes the relevant literature and reviews it methodologically. It also found out that standard costing is still being used by a large number of firms both in developing and developed countries. Overall, the research suggests that the importance of standard costing has not declined to such a low level despite the technological changes. In Japan standard costing is still used for different purposes despite its apparent weaknesses. It is also expected that the current research will help reveal whether or not one should continue teaching standard costing in the classroom.

Okwo and Ugwunta (2012) evaluated the effect of input costs on the profitability of brewing firms in Nigeria. A cross sectional data was

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gathered for the analysis from the annual reports of the sampled brewery firms for a period of 1999 to 2010. Measures of profitability are examined and related to proxies for the inputs cost assumed by brewers. The Ordinary Least Squares (OLS) stated in the form of a multiple regression model was applied in the analysis. The study revealed that the focal variable RSGAE (Ratio of Selling and General Administrative Expenses) designed to capture the effect of a company's operating expenses on profitability is statistically positive and impacts on profitability of the brewery firms in Nigeria.

Anyanwu (2013) carried out a study to unveil the management philosophy, practice and input to be affixed in evaluating the monitoring construction cost in order to reduce project abortion and abandonment, which are caused by project cost overruns. He used primary and secondary source from constructions firms in the Port Harcourt and the data as analysed using descriptive analytical frame work. He found that various management techniques especially planning have been developed. Such planning tools like the network analysis and bar-chart have helped in the early planning of construction project on which the application of other cost project management techniques are based.

Siyanbola (2013) carried out a study on the impact of budgeting and budgetary control on the performance of manufacturing company in Nigeria, it was conducted using Cadbury Nigeria Plc, as case study. They used a descriptive research design with data gathered through questionnaire administered to respondents. Non-parametric tool of chi square was employed to analyse the data. Hypotheses were tested and analysed on a 5% level of significance and it was revealed that budgeting is a useful tool that guides firms to evaluate whether their goals and objectives are actualised. The result concluded that budget, which is a continuous management activity, should adapt to changes in the dynamic business environment.

Olagunju, Imeokparia and Afolabi (2014) looked on the impact of budgetary control on cost control, profitability of manufacturing companies in Nigeria. The reasons for the research was to find out the how these variances are reported as a means of control in budgeting and also examined whether the manufacturing companies can reduce cost as well as maintain the quality of their products and services. The survey method was used and the companies encompass staff members of Cadbury Nigeria PLC, Friesland Foods Wamco Nigeria PLC and Nestle Nigeria PLC. They made the use of questionnaire instrument for the purpose of data collection and the data collected were tested with chi-square statistics through a Statistical Package for Social Sciences. The result discovered that budgetary control contributes to the profitability of manufacturing companies and it was also discovered that there are deviations from planned budget. It was also discovered that manufacturing companies can reduce cost and maintain high quality products.

Olugbenga, Olugbenga and Zaccheaus (2014) investigated the relationship that exists between cost management practices and firm‟s

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performance in the manufacturing organizations using data from 40 manufacturing companies listed on the Nigeria stock exchange during the period of 2003 to 2012. The study relied on secondary data extracted from the audited financial statement of the selected companies. Direct material cost, direct labour cost, production overhead cost and administrative overhead cost were taken as independent cost management variables while profitability (Operating profit) was taken as dependent variable representing the firm‟s performance. The result indicates that a positive significant relationship exists between cost management practices and firm's performance in the manufacturing organization

Steyn (2017) carried out a study to evaluate a standard costing framework for Company A, a South African logistics company, to establish if standard costing could assist logistics companies in managing fuel cost, and in turn assist in managing product costs. The logistics of company A was investigated under a case study approach. The research was conducted from a pragmatic research paradigm and a mixed method approach was followed. This study collected both quantitative and qualitative data. A qualitative method, in the form of a semi-structured interview with the management of Company A was followed to establish the current understanding and application of standard costing in Company A, while quantitative data was collected and utilised in the development of a standard costing framework. The findings of the study included that, in order to address and manage identified standard costing variances, companies need formal structures and accountability centres to assign corrective actions to. To achieve this, a performance management system will guide and assist management with variances in a formal and structured manner. A performance management system was further developed as per the framework put forward by Ferreira and Otley (2009) to assist Company A. The study concluded by illustrating the findings of the standard costing model and by developing a framework whereby identified areas of concern could be managed. Standard costing highlighted areas that required further investigation and illustrated possible savings for Company A.

Lawal (2017) looked on effect of cost control and cost reduction techniques in organizational performance. The major objective is to maximize profit, but the main constraints facing them are the rise in cost of operation. Due to this, the cost of production increases and could lead to certain cost control and cost reduction which make it complex for many organizations to operate as well organized cost limit of knowledge. The study aims to critically examine and evaluate the application of cost control and cost reduction in organizational performance and also to review the budget as an effective tool of cost control and cost reduction. A descriptive survey research was adopted. A total number of 50 questionnaires were administered and used for the study. The analysis of data collected was undertaken by applying appropriate statistical tools. Regression analysis was used to test the

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hypothesis with the use of SPSS. Based on the findings, it was evident that cost control has a positive impact on organizational performance and also the style of management has a positive impact on organizational performance.

Mutya (2018) carried out a study on cost control: fundamental tool towards organization performance. The study aimed at establishing the effect of cost control on organisation performance with a case study of Mount Elgon Millers Limited. The objectives of the study where; to assess the effect of budgeting on organisation performance in MEM Ltd, to examine the effect of standard costing on organisation performance in MEM Ltd and to determine the relationship between cost control and organisation performance in MEM Ltd. The study used a case study design where both quantitative and qualitative approaches were used, primary and secondary data was collected using document review, questionnaires and interviews, and it involved a population of 80 and a sample size of 67, simple and purposive sampling techniques were used. The instruments used were pretested and given to fellow researcher experts to comment on the validity and reliability of the question concept and content. The data collected from the field was edited, coded and categorized into themes, and then it was analyzed using the Statistics Package for Social Sciences (SPSS). The study findings on the effect of budgeting on organisation performance indicated that budgeting explains the variation in the organization performance up to 8.5% as denoted by R^2 value (0.085) and the remaining 91.5% is attributed to other factors other than budgeting. The study findings on the effect of standard costing on organisation performance indicated that standard costing explains the variation in the in organization performance up to 5.8% as denoted by R^2 value (0.058) and the remaining 94.2% is attributed to other factors other than standard costing. According to the study findings on the relationship between cost control and organisation performance, it was evident that there exists a significant and strong positive relationship between cost control and organization performance.

3.0 Materials and Methodology

The research design used in this study was the survey. Innoson group of companies which was incorporated in 2002 with its Head Office/Factory is situated at Plot W/L Industrial Layout, Emene, Enugu State, Nigeria. The population was 40 which comprised of management cadre and staff of accounts department. The study applied census sampling technique because the population was small and manageable. This method enabled us to collect first-hand information from the respondents through a modified 4-point Likert Scale with 12 item questionnaire. Cronbach Alpha test showed a reliability coefficient of 0.89. Chi-square statistical tool was employed in the test of hypotheses.

4.0 RESULTS AND DISCUSSION

Hypothesis 1

HO_1: Standard costing does not play a significant role in cost control in Innoson Technical Industries Nigeria Limited.

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Table 1: Contingency table for Hypothesis 1 (Extracted from analysis of research question 1)

Question S/N	SA	A	D	SD	Totals
7	23*4 =92	14*3 =42	3*2 =6	0*1 =0	140
8	11*4 =44	21*3 =63	8*2 =16	0*1 =0	123
9	18*4 =72	17*3 =51	2*2 =4	3*1 =3	130
Totals	**208**	**156**	**26**	**3**	**N=393**

Source: Field Survey, 2020.

Using Chi-square (x^2),

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

Expected Frequency (E) = $(\frac{(Row\ Total * Column\ Total)}{Grand\ Total\ (N)}$

Level of Significance = 0.05

Degree of Freedom (df) = (r-1)(c-1)

Where r = row

c = column

In this case, df = (3-1)(4-1) =2*3 = 6

From the contingency table, we generate the Chi-Square table thus:

Table 2: Chi-Square Table for Hypothesis 1

O	E	O-E	$(O-E)^2$	$\frac{(O-E)2}{E}$
92	74.10	17.9	320.41	4.32
44	65.10	-21.1	445.21	6.84
72	23.82	48.18	2321.31	97.45
42	55.57	-13.57	184.14	3.31
63	48.82	14.18	201.07	4.12
51	51.60	-0.6	0.36	0.01
6	92.62	-86.62	7503.02	81.01
16	81.37	-65.37	4273.24	52.52
4	8.60	-4.6	21.16	2.46
0	1.07	-1.07	1.14	1.07

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0	0.94	-0.94	0.88	0.94
3	0.02	2.98	8.88	444
Totals= 393	**504**	**-111**	**15280.82**	**698.05**

Source: Field Survey, 2020.

X^2 (Tc) = 698.05

From the Chi-Square distribution table,

X^2 (Tt) at 0.05 level of significance and a df of 6 = 12.592

Tc = 698.05> Tt = 12.592

Since the calculated Chi-square is greater than the tabulated Chi-square, we accept the alternate hypothesis which states that standard costing plays a significant role in cost control.

First, the findings made in this study indicate that standard costing plays significant role in cost control. Based on the findings too, these roles include setting standard of prices of materials, tracing causes of variance in standard costing and taking corrective actions on causes of variances. These roles, among others lead to the significant roles that standard costing plays in cost control. This result is in agreement with the findings of Maliah, Nik and Norhayati (2005) which indicates that standard costing continues to play a significant role in cost control. Furthermore, the result is consistent with the findings of Dezoysa and Herath (2007) that standard costing plays various roles in moderating costs in companies.

Hypothesis 2

HO_2: Budgeting does not play significant role in cost control.

Table 3: Contingency table for hypothesis 2 (Extracted from analysis of research question 2).

Question S/NO	**SA**	**A**	**D**	**SD**	**Totals**
10	16*4 = 64	20*3 = 60	4*2 = 8	0*1 = 0	**132**
11	12*4 = 48	23*3 = 69	4*2 = 8	1*1 = 1	**126**
12	13*4 = 52	15*3 = 45	9*2 = 18	3*1 = 3	**118**
Totals	**164**	**174**	**34**	**4**	**N = 376**

Source: Field Survey, 2020.

Using Chi-Square (x^2),

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$X^2 = \frac{\sum(0-E)2}{E}$

Expected Frequency (E) = (Row Total * Column Total)/Grand Total (N)
Level of Significance = 0.05
Degree of Freedom (df) = (r-1)(c-1)
Where
r = row
c = column
In this case, df = (3-1)(4-1) = 2*3 = 6
From the contingency table, we generate the Chi-square table thus:

Table 4: Chi-Square Table for Hypothesis 2

O	**E**	**O-E**	**$(O-E)^2$**	$\frac{(O-E)2}{E}$
64	132.44	-68.44	4684.03	35.37
48	126.44	-78.44	6152.83	48.66
52	118.44	-66.44	4414.27	37.27
60	132.46	-72.46	5250.45	39.64
69	126.46	-57.46	3301.65	26.11
45	118.46	-73.46	5396.37	45.55
8	132.09	-124.09	15398.33	116.57
8	126.09	-118.09	13945.25	110.60
18	118.09	-100.09	10018.01	84.83
0	132.01	-132.01	17426.64	132.01
1	126.01	-125.01	15627.50	124.02
3	118.01	-115.01	13227.30	112.09
Totals = 376	**1507**	**-1131**	**114842.63**	**912.72**

Source: Field Survey, 2020.
X^2 (Tc) = 912.72
From the Chi-square distribution table,
X^2 (Tt) at level of significance and a df of 6 = 12.592
Tc = 912.72 > Tt = 12.592
Since the calculated Chi-square is greater than the tabulated Chi-square, we reject the null hypothesis which states that budgeting does not play significant role in cost control and accept the alternative hypothesis which states that budgeting plays significant role in cost control.

This result agrees with that of Olagunju, Imeokparia and Afolabi (2014) that budgeting promotes profitability of companies by through cost reduction. In a related development,

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Mutya (2018) discovered that there exists a significant and strong positive relationship between cost control and organizational performance.

5.0 Conclusion and Recommendations

The study concludes that various roles played by standard costing through setting standard of prices of materials, tracing of causes of variances and taking corrective actions on causes of variances go a long way in controlling costs in organizations. Furthermore, we conclude that timely budgeting, adequate budgeting and supplementary budgeting are useful instruments of cost control. Companies that apply these measures stand a good chance of controlling their expenditure thereby maximising their profit.

Consequent on the findings, the following recommendations were proffered:

1. Since standard costing plays significant roles in cost control, planned efforts should be made ahead of time to facilitate successful setting standard of prices of materials, tracing of causes of variances in standard costing and taking corrective actions on causes of variances in medium scale industries.
2. Timely budgeting should be encouraged; adequate budgeting should be guided and regulated properly; supplementary budgeting should be properly supervised in medium scale industries.

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APPENDIX

Department of Management,
Faculty of Management Sciences,
Coal City University, Enugu.
Enugu State.
July, 2020

Dear Respondents,

REQUEST TO COMPLETE A QUESTIONNAIRE

I am a final year student of the above mentioned university and department. I am conducting a research on the application of cost control principles in medium scale industries, a study of Innoson Technical Industries Nigeria Limited, Emene, Enugu.

Please do me the favour of completing the questionnaire attached to this letter by filling the necessary spaces with the correct answer and be rest assured that the information supplied by you will be treated in utmost confidentiality and used solely for academic purpose.

Thanks for your cooperation.

Yours Sincerely,
Okeke kosisochukwu Cynthia

QUESTIONNAIRE

Please tick (good) in the appropriate box as it suits your response.

SECTION A: BIODATA OF RESPONDENTS

1 What is your gender?
   a. Male ( ) b. Female ( )
2 What is your Age?
   a. 20-30 years ( ) b. 31-40 years ( ) c. 41years and above ( )
3 What is your marital status?
   a. Single ( ) b. Married ( ) c. Divorced ( )
4 What is your Highest Educational Qualification?
   a. FSLC ( ) b. SSCE / NECO ( ) c. HND ( ) d. B.Sc/BA ( ) e. MBA / M.Sc / Ph. D ( )
5 What grade of staff do you belong to?
   a. Junior staff ( ) b. Senior staff ( ) c. Management ( )
6 How long have you been in the service?
   a. 1-5 years ( ) b. 6-10 years ( ) c. 11-15 years ( ) d. 16 years and above ( )

SECTION B: INFORMATION ON THE SUBJECT MATTER

SA= Strongly Agree (4), A= Agree (3), D= Disagree (2) and SD= Strongly Disagree (1)

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Do you agree that:

7 Setting standard of prices of materials helps to control cost?
   a. SA ( ) b. A ( ) c. D ( ) d. SD ( )

8 Tracing of causes of variance in standard costing helps to control cost?
   a. SA ( ) b. A ( ) c. D ( ) d. SD ( )

9 Taking corrective actions on causes of variances help in cost control?
   a. SA ( ) b. A ( ) c. D ( ) d. SD ( )

10 Timely budgeting helps in cost control?
   a. SA ( ) b. A ( ) c. D ( ) d. SD ( )

11 Adequate budgeting helps in cost control?
   a. SA ( ) b. A ( ) c. D ( ) d. SD ( )

12 Supplementary budgeting helps in cost control?
   a. SA ( ) b. A ( ) c. D ( ) d. SD ( )