

Evaluation of Management Accounting Techniques as Tool for Planning and Control Decision-Making in Selected Manufacturing Companies in Ibadan, Nigeria

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Abstract

The study evaluates Management Accounting Techniques as tools for Planning and Control Decision-Making in the selected manufacturing business in the study area. It has are specific objectives as: to examine the socio-economic parameters influencing selection of MATs, to examine effect of socio economic parameters on the effectiveness of MATs, to identify the extent of adoption of MATs. Thirty (30) manufacturing companies were selected as the sample size through stratified random sampling technique. Descriptive analysis was employed through the use of tables, percentages, ranks e.t.c. However the hypotheses were tested using of Chi Square (X^2) at 5% of significance, Correlation and Regression analysis through the use of Stata 10. The result revealed that socio economic parameter has significant effect on its adoption and effectiveness Based on findings, the study therefore recommends that management accounting techniques should be embraced thoroughly by manufacturing businesses developing countries such as such as Nigerian manufacturers in order to better their portfolio and improve their planning and control decision-making. The study therefore help managers of manufacturing companies to know the importance of management accounting techniques, impact of socio economic parameter in is adoption and its effect as planning and control decision-making tools.

Keywords: management accounting techniques, planning, competitive environment, manufacturing companies, decision making

INTRODUCTION

Management process is a set of interdependent activities used by an organization to carry out their functions which include, planning, organizing, staffing, leading, and controlling. Brech (2010) recommends the following definition of management as the most appropriate for general usage: "A social process entailing responsibility for the effectiveness and economic planning and regulations of the operation of an enterprise in fulfillment of a given purpose of task." Such responsibilities involve:

- (i) Judgment and decision in determining plans and in using data to control performance and progress against plans; and
- (ii) The guidance, integration, motivation and supervising the personnel comprising the enterprise and carrying out its operations.

Management Accounting refers to that part of the management process which is focused on adding value to organizations by attaining the effective use

of resources by people, in dynamic and competitive contexts.

It is an integral part of the management process, distinctly adds value by continuously probing whether resources are used effectively by people and organizations - in creating value for customers, shareholders or other stakeholders. (Adelegan, 1998). In this regard, *resources* include not only financial ones, but also all other resources created and used by organizations as a result of financial expenditures. Thus, information and knowledge, work processes and systems, trained personnel, innovative capacities, morale, flexible cultures, and even committed customers may be included as *resources* - along with special configurations of resources that may be identified as strategic capabilities, core competencies or intellectual capital. Management accounting tasks deals with collection and provision of information for managers to use in decision making. The purpose of the management accounting discipline is to aid management decision making. Its role has

traditionally been limited to the provision of relevance information for achieve planning, control and decision making (Roslender and Hart, 2003). The impact of the manner in which decision information is provides by accountant to decision makers is a critical in understanding how management accounting information should be collected and provided to superior performance. With ever increasing competitive pressure for the firms, a regular supply of management accounting information is arguably more importance than ever.

Moreover, previous research has suggested that management accounting have indeed adapted successfully and is increasingly becoming involved in decision making (Rowe et al, 2008). Also, there are evidence in management accounting literature that examines the relationship between decision making and performance (Nyamori et al, 2001). It is on this basis that literatures submit that Management Accounting is concerned with providing information to managers especially people inside an organization that direct and control its operation. Thus, the nature of Management Accounting as a manager oriented tool requires that its study be preceded by some understanding of what managers do, the information need, and the general business environment.

However, Planning can be thought of as a thorough formalized process encompassing great effort at all levels of an organization to come up with essential short and long term decisions and policies and recommended actions that will help direct a business or organization towards a stated vision, goal, and objective which may include shareholder appreciation, stakeholder and employee satisfaction, while encompassing financial objectives, moral, and ethical considerations in the decision making process (Bryson, 2010; Brammer, Harris, & Phillips (2010); Dye & Sibony, 2007).

Moreover, companies are required by law to keep certain financial information, however, it is often found that in meeting the business legal obligations the small business owner is found wanting. It may be too convenient to ensure the bank balance is always positive and then wait until the end of the accounting year before knowing the financial results of the business. This approach may not be consistent with meeting the legal requirements but today much help is available to overcome some areas of weakness in controls within a business.

However, Management Accounting is an internal business function responsible for reporting financial information to business owners. Companies often use management accounting as a support tool for business management. Management Accounting task requires that accountant make judgments in collecting and providing information to use in decision making.

It provides useful information for management to make decision and operate plan and control (Pizzini, 2006; Cardinaels et al, 2004; Cavaleski et al, 2003; Chang, 2002). Business owners and managers also must pay careful attention to the problem that may arise in the application management accounting as the survivals of manufacturing firms depend on ability to both performance and strategies to improve the quality of decision (Duh et al, 2009).

Management accounting therefore focuses primarily on data gathering (from internal and external sources) analyzing, processing, interpreting and communicating the results information for use within the organization so that management can effectively plan, make decisions and control operations. The above activities will therefore ensure effective:

- Formulation of plans to meet objectives i.e. strategic planning
- Acquisition and use of fund i.e. financial management
- Recording of transaction i.e. financial cost accounting
- Communication of financial and operating information
- Corrective action to bring plans and results into line, i.e. financial control
- Reviewing and reporting on systems and operation i.e. internal audit or management audit.

STATEMENT OF PROBLEM

The Manufacturers Association of Nigeria (MAN) has been complaining of societal attitude toward locally manufactured goods, low patronage for locally made goods and preference for imported ones substantiate due to the fact that competition has become stiff and fierce, the imperatives of globalization have all combined to force organization to seek better ways of optimizing the competitive advantage. Companies lacking appropriate Management Accounting skills may be unable to adjust to the pressure of this competition and may not succeed in the long run as it is very critical to survival of business.

Some manufacturing companies in Nigeria are not even aware of the importance of Management Accounting Techniques which leads them to engage in activities which do not add value to their business and in which they do not have competitive ability thus leaving their core competent area to suffer and incur unnecessary costs. Moreover, it is observed that there has been tremendous work on topics related to this, but most of them used descriptive analysis and a few among them that attempted to use models limited themselves to general applicability without them given consideration to socio-economic parameter affecting selection of management accounting techniques as planning and control decision making

tool and its impact in the effectiveness of those techniques. It is on view of this that the present study decided to incorporate socio economic parameter into the study to see its influence on the adoption of management accounting techniques and its effectiveness. Hence, the identified vacuum or gap which the study intended to fill.

OBJECTIVES OF THE STUDY

The general objective of the study is to evaluate management accounting techniques as planning and control decision-making tools in selected manufacturing companies in Ibadan. The specific objectives of this research are to:

- i. Identify the socio-economic parameters determining selection of management accounting techniques as planning and control decision-making tools in manufacturing companies in Ibadan, Nigeria.
- ii. Examine the extent to which Nigeria manufacturing companies adopt management accounting techniques for planning and control decision making. .
- iii. Examine the impact of management accounting techniques on corporate standardization and competitiveness in the study area.

RESEARCH HYPOTHESES

- Ho₁:** Socio-economic parameters does not influence adoption of management accounting techniques as planning and control decision-making tools in manufacturing companies in the study area
- Ho₂:** Management Accounting Techniques are not effective tools in planning and control decision-making in manufacturing companies in the study area.
- Ho₃:** Management Accounting Techniques do not have a significant impact on corporate standardization and competitiveness.

LIMITATION OF THE STUDY

The main limitation encountered during this research work was the reluctant attitude of the respondents in term of response to questionnaire all in the name of company policy

CONTRIBUTION TO KNOWLEDGE

The study revealed that socio-economic parameters have significant impact in the adoption of Management Accounting Techniques as tool for planning and control decision making in the study area. Most of the previous studies in developing countries are descriptive, reporting the adoption of MATs without any further analysis to find out the factors that influence its adoption. This study therefore revealed the impact of socio economic parameters on adoption of MAT using descriptive analysis as well as other analytical techniques

METHODOLOGY

The research work was carried out in Ibadan the capital of Oyo State. Ibadan is the capital city of Oyo State and the third largest metropolitan area in Nigeria, after Lagos and Kano, with a population of 1,338,659 (Census, 2006). Next to Lagos, Ibadan have the largest manufacturing companies in southwest Nigeria and also the report from Manufacturing Association of Nigeria revealed that there are fifty-seven (57) active manufacturing companies in Ibadan as at May 2012.

Stratified random sampling method was adopted for this research which involves classifying the target population into groups based on their industrial sector. Thereafter, the required sample is chosen from each sector. This is done in order to ensure every company in the population is given equal and independent chance of being included in the sample. Primary data was used in the study which includes personal interview and questionnaire administered to thirty (30) sampled manufacturing companies. The copies of the questionnaire were distributed to their Finance Directors, Finance Managers, the Senior Management Accountant e.t.c. The table below shows the number of sample companies selected randomly from each sector:

Table 1: Number of Companies in the Population and Companies Randomly Selected From Each Sector

SECTOR	No of companies in the population	No of Companies Selected	% of companies Chosen
Food, Beverages and Tobacco	22	10	45.5
Basic Metals, Iron and Steel	9	3	33.8
Chemical and Pharmaceutical	8	4	50
Domestic and Industrial Plastic	5	3	60
Pulp, Paper and Paper product	7	4	57.14
Wood and Wood product	1	1	100
Non-Metallic Mineral product	2	2	100
Electrical and Electronics	2	2	100
Motor-Vehicle and Miscellaneous	1	1	100
Total	57	30	

Source: Field Study, 2012

The independent and dependent variables in this study vary according to the research objectives. Thus, in the first objective, the socio-economic parameters (Age, Sex, Marital Status, Educational Qualification, Year of experience, Department and Company) are the independent variable and corporate decision making is the dependent variable. in the second

objectives, the independent variables identified are management accounting techniques (Capital Budgeting Techniques, Return on Investment, Budgeting System for Coordination, Controllable profit, Budgeting System for day to day operations, Standard cost and variance analysis, Customer satisfaction survey, Budgeting system for financial planning, Divisional profit, Cash flow return on investment, long range forecasting and Balance scorecard) and the dependent variables are decision making in manufacturing companies. In third objective, corporate standardization and competitiveness are the dependent variable and management accounting techniques are the independent variables. Moreover, chi-square, correlation and regression analysis method were analytical techniques adopted through the use of Stata, Version 10 to test the three hypotheses respectively.

Model Specification

Below are the model specification drawn from this research study.

Model 1. Socio –economic parameters for selecting management accounting as planning and control decision-making tool

$$CDM = f(A + S + M + Q + Pq + Ye + d + C) \quad (1)$$

$$CDM = \beta_0 + \beta_1A + \beta_2S + \beta_3M + \beta_4Q + \beta_5Ye + \beta_6D + \beta_7C + \dots + e \quad (2)$$

CDM: Corporate Decision Making

A: Age

S: Sex

M: Marital Status

Q: Qualification

Ye: Year of experience

D: Department

C: Company

Q: Qualifications

Model 2: Extent of adoption of management accounting techniques by Nigerian manufacturing companies.

$$PCD = f(CBT + ROI + CP + BSC) \quad (3)$$

$$PCD = \beta_0 + \beta_1CBT + \beta_2ROI + \beta_3CP + \beta_4BSC + \dots + e \quad (4)$$

Where:

PCD: Planning and control decision-making

CBT: Capital Budgeting Techniques

ROI: Return on Investment

CP: Controllable Profit

BSC: Balance Scorecard

Model 3: Impact of management accounting on corporate standardization and Competitiveness

$$CSC = f(CBT + ROI + CP + BSC) \quad (5)$$

$$CSC = \beta_0 + \beta_1CBT + \beta_2ROI + \beta_3CP + \beta_4BSC + \dots + e \quad (6)$$

Where:

CSC: Planning and control decision-making

CBT: Capital Budgeting Techniques

ROI: Return on Investment

CP: Controllable Profit

BSC: Balance Scorecard

DATA ANALYSES AND DISCUSSION

HYPOTHESIS 1: Chi Square analysis of hypothesis 1

Socio-economic characteristics	Planning And Control		X ²	P
	No	Yes		
Age				
< 30 years	51 (66.2)	26 (33.8)	2.647	0.266
31 – 50 years	90 (57.0)	68 (43.0)		
> 50 years	12 (70.6)	5 (29.4)		
Sex				
Male	79 (68.1)	37 (31.9)	4.920	0.027
Female	74 (54.4)	62 (45.6)		
Education				
Below B.Sc. /B.A	18 (94.7)	1 (5.3)	64.904 (exact)	<0.001
B.Sc. /B.A	89 (82.4)	19 (17.6)		
Post Graduate	46 (36.8)	79 (63.2)		
Years of Experience				
< 5 years	54 (62.0)	33 (38.0)	2.712	0.253
5-10 years	36 (41.38)	41 (58.62)		
>10 years	25 (28.41)	63 (71.59)		
Marital Status				
Married	95 (73.6)	34 (26.4)	19.112 (exact)	<0.001
Single	55 (46.6)	63 (53.4)		
Divorced	3 (60.0)	2 (40.0)		
Department				
Administration	37 (74.0)	13 (26.0)	16.820	0.001
Account	69 (55.7)	55 (44.3)		
Audits	22 (45.9)	26 (54.2)		
Operation	25 (83.3)	5 (16.7)		
Company type				
Food, Beverages and Tobacco	55 (38.2)	89 (61.8)	124.530 (exact)	<0.001
Chemical and Pharmaceuticals	3 (25.0)	9 (75.0)		
Domestic and Industrial Plastic	21 (95.5)	1 (4.5)		
Pulp, Paper and paper product	34 (100.0)	0 (0.0)		
Others	40 (100.0)	0 (0.0)		

Source: Field Study, 2012

The table above shows the relationship between workers' socio-economic characteristics and selection of Management Accounting Techniques for Planning and Control Decision-Making. The table shows that less than half of the workers who are less than 30 years (33.8%) and between 31 – 50 years (43.0%) reported selection of MATs by their company and only 29.4% of those who are above 50 years old reported that MATs is used by their company. The chi-square analysis of the relationship between age of workers and selection of MATs for Planning and Control shows that there is no significant relationship ($X^2=2.647$, $P>0.05$) between workers' age and selection of MATs.

Less than half of male workers (31.9%) and female workers (45.6%) report selection of Selection of MATs for Planning and Control. The chi square analysis of relationship between workers' gender and selection of MATs shows that there is a significant relationship ($X^2=4.920$, $P<0.05$) between gender and selection of MATs.

Very few respondents have qualification below B.sc (5.3%) and 17.6% possesses B.sc while 63.2% claimed to have post Graduate Qualification. The chi-square analysis of the relationship between qualification of workers and selection of MATs for

Planning and Control shows there is significant relationship ($X^2= 64.904$, $P<0.05$) between qualification and selection of MATs.

38% of respondents have years of experience to be less than 5 years, follow by respondent with 5-10 years experience (58.62%) and respondents having experience above 10 years (71.59%). The chi-square analysis of the relationship between age of workers and selection of MATs for Planning and Control shows that there is no significant relationship ($X^2=2.712$, $P>0.05$) between workers' years of experience and selection of MATs.

However, the study further shows that 26.4% of the respondents are married, 55.4% are single while only 40% as divorced. The chi-square analysis of the relationship to the Marital Status and selection of MATs for Planning and Control shows that there is a significant relationship ($X^2=19.112$, $P<0.001$) between Marital Status and selection of MATs. Thus, the hypothesis which state that Socio-economic parameters does not influence adoption of management accounting techniques as planning and control decision-making tools in manufacturing companies in the study area is accepted.

HYPOTHESIS 2: Correlation analysis of hypothesis 2

Socio-economic variables	Rate of Effectiveness of Management Accounting Techniques	
	Effectiveness Rate of Planning	Effectiveness Rate of Control/Performance Evaluation
Age	0.065	0.078
Sex	0.178*	0.126*
Marital status	0.504*	0.457*
Education	0.287*	0.258*
Years of experience	0.067	0.078
Department	0.008	-0.011
Company	-0.607*	-0.581*

Source: Field Survey, 2012

Note: The correlation coefficients with asterisks (*) indicate a significant linear relationship.

The table above shows that there are significant relationships ($p<0.005$) between sex, marital status, level of education, type of company and effectiveness rate of each of the Management Accounting Techniques. Sex, marital status and level of education of workers have positive significant relationship with effectiveness rate of each of the MATs while type of

company follows a negative relationship with each rate of effectiveness. Thus, hypothesis 2 which state that Management Accounting Techniques are not effective tools in planning and control decision-making in manufacturing companies in the study area is rejected.

Hypothesis 3: Regression Analysis of impact of MAT on corporate Standardization and Competitiveness

Source	SS	Df	MS	F	P
Model	1293.838	12	107.820	21.58	<0.000
Residual	194.099	239	4.996		

Source: Field Survey, 2012

The table above shows the fitness of the variables (variable costing, absorption costing, target costing, etc) predicting the model on impact of MAT on corporate standardization and competitiveness. It

shows that there is a linear relationship between the variables and corporate standardization and competitiveness and the variables significantly predict the model ($F_{(12, 239, 0.05)}$, $P<0.05$).

Regression Coefficients of Impact of MAT on Corporate Standardization and Competitiveness

Impacts	B	T	P	R ²
Management Accounting Techniques				
Capital budgeting techniques e.g NPV & IRR	0.024	3.00	0.003*	0.52
Return on Investment	0.005	0.68	0.496	
Controllable Profit	0.015	2.31	0.022*	
Customer satisfactory survey	-0.011	-1.39	0.165	
Divisional Profit	0.027	3.82	< 0.001*	
Long range forecasting	-0.010	-1.45	0.147	
Budng system for coordinating activity	0.011	1.52	0.131	
Budgeting system for day-to-day operation	0.010	1.39	0.165	
Budgeting system for financial planning	0.006	0.95	0.341	
Balance score card adoption	-0.003	-0.49	0.626	
Standard cost and variance analysis adoption	0.006	0.83	0.407	
Cash flow return on investment adoption	-0.007	-1.02	0.308	
Constant	15.137			

Source: Field Survey, 2012

The table above shows the regression analysis of the impact of various MAT on corporate standardization and competitiveness. The coefficient of the various MAT shows that they do not have significant effect on corporate standardization and competitiveness except Capital budgeting techniques e.g NPV & IRR which shows a significant effect ($t=3.00$, $P<0.05$), Controllable Profit ($t=2.31$, $P<0.05$) and Divisional Profit ($t=3.82$, $P<0.05$). The table shows that a unit increase in capital Budgeting techniques, holding all other factors constant, yields 0.024 increase in corporate standardization and competitiveness, a unit increase in Return on Investment yields 0.005 increase in corporate standardization and competitiveness, a unit increase Controllable Profit brings about 0.015 increase in corporate standardization and competitiveness, a unit increase in Customer satisfaction survey brings about 0.011 decrease in corporate standardization and competitiveness, a unit increase in Divisional Profit yields 0.027 increase in increase in corporate standardization and competitiveness, a unit increase in Long range forecasting brings 0.010 decrease in corporate standardization and competitiveness, a unit increase in Budgeting system for coordinating activity yields 0.011 increase in corporate standardization and competitiveness, a unit increase Budgeting System for day-to-day operation yields 0.010 increase in corporate standardization and competitiveness, a unit increase in Budgeting system for financial planning brings 0.006 increase in corporate standardization and competitiveness, a unit increase in Balance score card yields -0.003 decrease in corporate standardization and competitiveness and a unit increase in Standard cost and variance analysis yields 0.006 increase in corporate standardization and competitiveness.

The regression model follows the regression equation:

$$Y = C + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + \dots + B_nX_n$$

Where Y is the dependent variable, C is the intercept (constant), B_n is the coefficient or slope of the equation and X_n is the n independent variables. From the above equation, Y means corporate

standardization and competitiveness, X_1 means Capital Budgeting Techniques, X_2 means Return on Investment, X_3 means Controllable Profit, X_4 means Customer satisfaction survey, ..., X_n is the Cash flow return on investment adoption. From the table above $C=15.15$, $B_1=0.046$, $B_2=0.009$, $B_3=0.018$ and $B_4=-0.002$ are substituted in the regression model. Thus, hypothesis 3 which state that Management Accounting Techniques do not have a significant impact on corporate standardization and competitiveness is accepted

CONCLUSION AND RECOMMENDATION

Most of the manufacturing companies are not using management accounting techniques frequently. It is worth mentioning that most of the manufacturing organizations are not well informed about all these management accounting techniques. Among 12 management accounting techniques in consideration, most influential techniques are: Cash flow return on investment, Return on Investment, Long range forecasting respectively. From this research, it can be concluded that though Researchers and Academicians are trying to pay attention on the manufacturing business, firm's concerned personnel attitude towards the use of management accounting techniques in decision making, still manufacturing organizations of the study area use various management accounting techniques in narrow scale. It is necessary to apply MATs to make effective management decision by the manufacturing organizations operating in the study area. The modern management accounting techniques enable the organization to improve the innovative capacity of the organization and flexibility so that it can continually change and improve performance.

Moreover, to enhance the management accounting techniques and to gain competitiveness of manufacturing companies the study recommends' that manufacturing companies should be synthesized and advised on the usefulness of MATs and moreover all socio economic parameters needed for adoption of these techniques should be put in place in order for manufacturing companies realize is impact in their business and to continue to survive in this strict and ever dynamic competitive environment.

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