MANAGEMENT ACCOUNTING INFORMATION SYSTEM AND EFFECTIVE BUSINESS DECISIONS: AN EVALUATION OF QUOTED FMCG MANUFACTURING FIRMS

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Abstract

This paper examined the impact short and long term management accounting information system (STmais and LTmais) on effective business decisions of quoted Fast moving consumers' goods manufacturing firms in Nigeria. A descriptive survey research design was used. The population comprises of 28 quoted companies and source list consists of 8 companies representing 30% of the population with 903 staff selected at random. Primary data were collected and analyzed using regression technique. The analysis results established that STmais has significant effects on effective business decision in FMCG companies in Nigeria ($r = .797$; $p < .05$) and LTmais has significant impact on effective business decision in FMCG companies in Nigeria ($r = .768$; $p < .05$). The combined impact is also significant ($r = .862$; $p < .05$). The study concluded that management accounting information system has a significant impact on effective business decision, therefore recommends that FMCG manufacturers' should pay more attention to management accounting information system to equip managers for decision making. The study contributed to literature through the empirical result generated from proper date collection and analysis of the harmonized effect of MAIS on effective business decision. The result also validated the findings of previous researchers. It was suggested that future researchers should expand the scope of MAIS components to have an extended assessment of the effect of MAIS on the general business decision.

Key words: Accounting information, Management decision, Departmental stores, Lagos state

Introduction

Management accounting information system (MAIS) is a structure that embodied various techniques, employed by an organization to collect, process, manage, report store, and retrieve its financial data to assist managers in objective decision making (Balachandran, 2012). MAIS is an internal structure that provides management with accounting information needed to plan, implement, control, and organize business activities. It can be used by all corporate organizations whether manufacturing, non-profit making and service oriented

businesses (Nikoomaram, 2012; Azize, 2016). The emerging global economic scenario characterized by rapid changes in production processes, increased in consumer taste and demand, cutthroat market competition and the producers struggle to survive the unpredictable market condition have placed a serious responsibility on management accounting information system. Professional managers on their part no longer used the rule of thumb in business decision and management (Adesina, Ikhu – Omoregbe & Aboaba, 2015). Reliable information is needed by managers from proven scientific and institutionalized methods to discharge their duties. They include financial ratios, forecasts, budget and variance analysis, cost volume profit analysis, transfer pricing, divisional performance evaluation, make or buy decision, capital budgeting decision and sensitivity analysis, capital rationing, departmental or product viability and linear programming technique. The onus for producing the appropriate information to assist management in effective business decisions fall on the management accounting system (Okpala, 2017). The system accumulates relevant and futuristic financial data with emphasis on activity planning and control that dovetails into profit maximization and business growth (Hla & Teru, 2015).

According to Sola (2013), manufacturing firms in Nigeria are facing serious challenges leading to poor business decisions and profit minimization. Apart from the external factors, the major issues are of internal nature which is within the control of the management. They consist of poor internal control design and implementation, inaccurate forecasting, poor inventory management, poor staff reward system, lack of proper management accounting information analysis and usage (Siamak, 2012; Okpala, 2017). Most manufacturing companies in spite of the established management accounting department have not been able to take advantage of accounting information from the system to assist management in making appropriate and effective business decision that would enhance their profitability level and expansion (Ige & Odetayo, 2014; Oladejo, 2013). Some manufacturing firms in Nigeria have collapsed due to consistent loss making that has eroded shareholder's funds. This issue would have been ameliorated by proper management accounting implementation. This scenario has raised questions among scholars and professional on how effective has been the operations of management accounting department in manufacturing sector in Nigeria? To the best our knowledge (i) sufficient studies have not been carved out to harmonize the effect of both the short term and long term management accounting information system on effective business decision (ii) Fast Moving Consumer Goods Companies are yet to be covered. This has created gaps in the body of knowledge therefore this study intends to produce practical evidence to fill the identified gaps.

The general objective of this paper was to evaluate the effect of management accounting information system on effective business decisions of quoted manufacturing companies in Nigeria. The subsidiary objectives consist of measuring the impact of: (1) Short term management accounting information system on the effective business decision. (2) Capital expenditure appraisal on effective business decision. Annual budget practice and cost volume profit analysis were used as short term management accounting

information proxies while capital expenditure appraisal represent Long term management accounting information system. Profitability and business expansion were used as effective business decision deputations on the ground that every business decision taken is to add value which manifests in profit maximization and growth. The scope of this study covers annual budget practice, cost volume profit analysis and capital expenditure appraisal in quoted fast moving consumer goods companies' sub-sector of manufacturing sector in Nigeria. The hypotheses to be tested include:

H01: Short term management accounting information system has no significant impact on effective business decision. Hypothesis H01 was broken into two namely:
h01a: Annual budget practice does not significantly affect profitability
h01b: Cost volume profit analysis has no significant effect on profitability

H02: Long term management accounting information system does not significantly affect business expansion.

H03: The impact of management accounting information system on effective business decision is not significant.

Literature Review

Accounting information is a substance for management planning, control and effective business decision making as the result. It refers to report of relevant financial information regarding the economic activities of an organization. Kamal (2015) reported that the primary function of accounting is to accumulate and communicate quantitative and qualitative information essential to understanding the activities of an enterprise and assist management in the discharge of their duties. Kharuddin, Zariyawati *and* Annuar (2010) noted that information is usually what gives a company a competitive advantage and create the ability to make profit. Management at different levels performs specific functions but all are directed towards achieving the organizational general objectives. The top level deals with strategy, the middle level deals with tactical issues and the bottom level deals with operational issues.

Okpala (2017) stated that the information needs of management are as follows: (i) Strategic information: This information employed to identify and evaluate various options to assist leaders to choose between competing alternative course of actions, define goals and priorities, initiate new programmes and develop policies, merger and acquisition decision, long-term needs of funds for on-going and future projects, going public and approaching financial institutions for term loan. Strategic information is predictive in nature and relies heavily on external sources of data. The executive needs eighty per cent (80%) strategic information and also 20% of tactical information to strategize. They hold titles such as chief executive officer, chief financial officer, chief operational officer, chief information officer, chairperson of the board, president, vice president, head of corporate head. (ii) Tactical information: This helps middle level managers to decide on allocation of resources, alternative sources of funds, use of limiting factors at short run, deployment of surplus funds in short-term securities and establish controls during the implementation of the top management plans in an organization. This information is generally predictive but focuses on short-

term trends. It may be partly current and historical, and may come from external sources but more of internal. Middle managers needs eighty per cent (80%) of tactical, ten per cent (10%) strategic and ten per cent (10%) of operational information for effectiveness. They hold titles such as general manager, plant manager, regional manager, and divisional manager. (iii) Operational information: This information is used for the day-to-day operations of the enterprise and they are beneficial in regulating operations that are of repetitive nature. Lower managers require needs ninety per cent (90%) of operational information and ten per cent (10%) tactical information to controlled activities at bottom level. These managers have job titles such as: office manager, shift supervisor, department manager, foreperson, crew leader, store manager. Information system has been widely used by many corporations to automate existing operations and to improved business activities efficiency (Kharuddin, Zariyawati *&* Annuar, 2010). However, the collection of appropriate data and computations are the responsibility of management accounting information system. Figure 1 illustrates the types of information needed at different levels of management and the interactions between different levels.

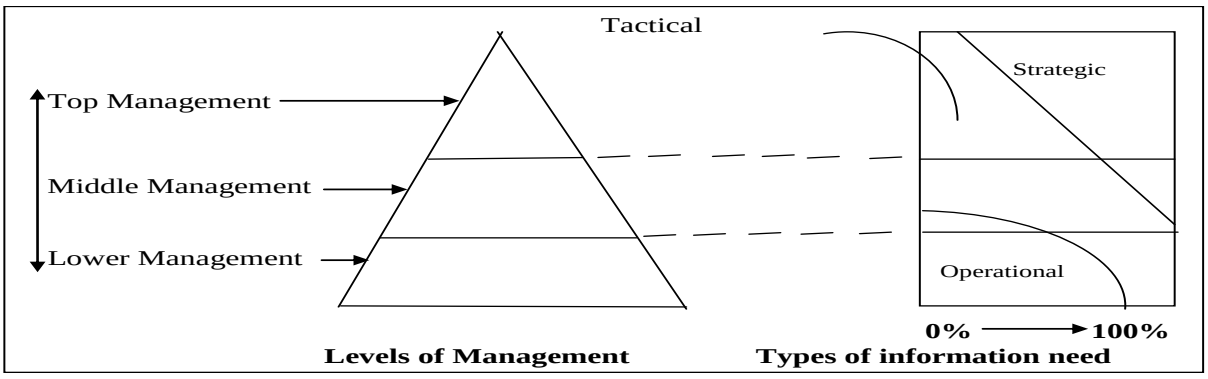

Figure 1: Types of information and levels of management
Source: Researcher's conceptual model (2018)

Managers at different levels of the organization involve in different amounts of time on the four managerial functions of planning, organizing, leading, and controlling. Planning is the choice of appropriate organizational goals and the accurate directions to achieve the selected goals. Organizing involves determining the tasks and the relationships that allow employees to work together to achieve the planned goals. While leading is primarily concern with motivate and coordinate employees to work together to achieve organizational goals. Lastly, in controlling, the managers monitor and measure the degree to which the organization has reached its goals. The top managers do significantly more planning, organizing, and controlling than do managers at any other level. However, they do much less leading. Most of the leading is done by first-line managers. The amount of planning, organizing, and controlling decreases down the hierarchy of management; leading increases as you move down the hierarchy of management (Onaolapo & Odetayo, 2012). Figure 1 showed the degree to which top, middle, and supervisory managers perform each of these functions.

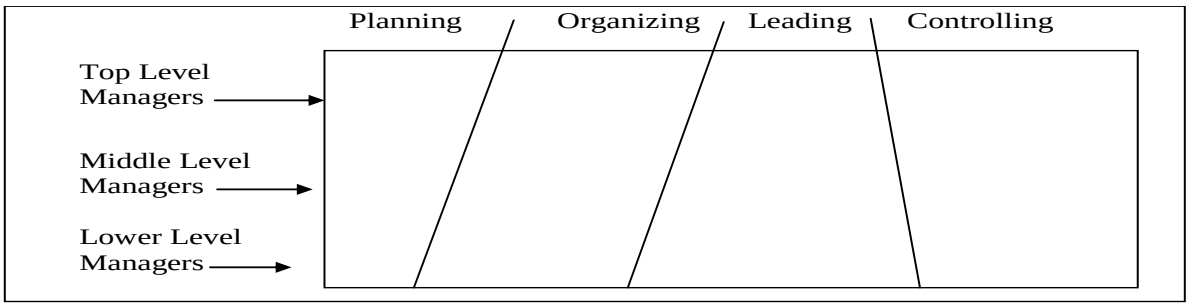

Figure 2: Time spent on management functions at different management levels
Source: Researcher's conceptual model (2018)

Running a business requires management ability to make good decisions. A wrong choice can affect the entire company operations and performance. It is important for business owners and management to understand the implication of each decision they make and to continually improve their decision-making skills (Al-dmour, Al-Fawaz, Al-dmour, & Allozi, 2017). The seven-step strategy for effective decisions making includes: create a constructive environment, investigate the situation in detail, generate good alternatives, explore your options, select the best solution among various alternatives, evaluate your plan, communicate your decision and take action. These steps can only be guaranteed by the proper analysis from management accounting information system (Azmi & Sri, 2015). According to Nikoomaram (2012), following prerequisites must be present on any useful MAIS: completeness, accuracy, reliability, comparability, cost effectiveness, relevance and objectivity. The information can be generated manually or automatically using appropriate software. Some of the MAIS components used in this paper include: Budgetary planning and control, Cost-volume-profit analysis**,** and Capital investment appraisal.

(a) A budget has been defined as a financial or qualitative statement prepared and approved prior to a defined period of time for the purpose of attaining a given objective (management by objectives). It may include income, expenditure and employment of capital while budgeting control is the establishment of budget relating to the responsibilities of executives to the requirement policy, and the continuous comparison of actual with budgeted results either to secure by individual action the objective of that policy, or to provide a basis for its revision (Chartered Institute of Management Accountants, 2005). Budget as a tool enables management to accurately plan her activities and exercise appropriate control to attain the desired profit level. This is achieved through comparison of actual income or spending with planned outcome to determine the level of deviation to prompt management action based on exceptions (management by exceptions). When management is centred on objectives and exceptions, profitability and expansion are most likely to be attained (Adeniji, 2015).

(b) Cost-volume-profit analysis (Cvpa) is used to determine how changes in costs and volume affect a company's operating and net income. It is a tool used to show the relationship between various ingredients in profit planning such as unit sales price (Sp), unit variable cost (Vc), fixed cost (Fc), Sales volume and sales mix in case of multiproduct

organization. Cvpa assumption is that all the above elements are constant and closing stock is nil (Adeniji, 2015). Mixed costs must be split into their fixed and variable component using high-low method, scatter plot method or regression method as appropriate. CVPA shows the relationship between sales volume, costs and profit known as break-even point (BEP). The BEP technique has many applications for the purpose of the CVP analysis. Some of the techniques are:

$$\textbf{BEP (units)} = \textbf{FC / CM(p/unit)} \quad \text{----------(1)}$$

$$\textbf{BEP (Naira)} = \textbf{BEP(unit) x SP} \quad \text{----------(2)}$$

$$\textbf{BEP (units)} = \textbf{FC / CMR or PV ratio}$$

Where: CM= (SP-VC); CMR = (SP-VC/SP)

BEP can also be used to forecast desired profit which case sales revenue required to earn the desired profit is calculated using the following breakeven point formula:

$$\textbf{BEP (units)} = \textbf{FC +} \text{ desired profit } \textbf{/ CMR} \quad \text{----------(3)}$$

The sales revenue required to earn the desired profit after tax is calculated using the following breakeven point formula

$$\textbf{BEP (units)} = \frac{\left(\frac{\textbf{FC + PAT}}{\textbf{1- Tax Rate}}\right)}{\textbf{CMR}} \quad \text{----------(4)}$$

(c) Capital investment appraisal is capital budgeting or project evaluation techniques primarily concerned with planning process that facilitates the determination of the firm's investments both on long term and short term. It is used for evaluation of acquisition of property and equipment, R & D projects, advertising campaigns, new plant and machinery etc. Under investments are selected and executed based on the priorities of stakeholders and decision makers (Azize, 2016). The Cpa techniques include the scientific methods such as net present value, internal rate of return, modified internal rate of return, adjusted present value profitability index equivalent annuity, and real option analysis and also the traditional methods such as accounting rate of return, payback period, discounted payback period,. The two most popular formulas are NPV and IRR:

(i) Net present value

The net present value (NPV) or net present worth (NPW) is a measurement of profit calculated by subtracting the present values (PV) of cash outflows (including initial cost) from the present values of cash inflows over a period of time. The NPV formulae are (i) When cash inflows are even:

$$\textbf{NPV} = \textbf{R}\times \frac{\left(1-(1+i)^{-n}\right)}{i} - \textbf{Initial Investment} \quad \text{----------(5)}$$

Where: **R** is the net cash inflow expected to be received in each period; **i** is the required rate of return per period; **n** are the number of periods during which the project is expected to operate and generate cash inflows. (ii) when cash inflows are uneven:

$$NPV = \left(\frac{R_1}{(1+i)^1} + \frac{R_2}{(1+i)^2} + \frac{R_3}{(1+i)^3} \right) - \text{Initial Investment} \text{ ---- (6)}$$

Where: **i** = the target rate of return per period; $\mathbf{R_1}$, $\mathbf{R_2}$, **and** $\mathbf{R_3}$ **=** is the net cash inflow during the first, second and third period and so on.

(ii) Internal rate of return

The IRR is a discount rate that makes the net present value (NPV) of all cash flows from a particular project equal to zero. The discount rate can then be thought of as the forecast return for the project. If the IRR is greater than a pre-set percentage target, the project is accepted but if less than the targeted, the project is rejected. The IRR formulae is

$$IRR = r_a + \frac{NPV_a}{NPV_a - (NPV_b)} r_a - r_b \text{ ----------(7)}$$

Where: r_a = lower discount rate; r_b = higher discount rate; NPV_a = net present value of the lower rate; NPV_b = net present value of the higher rate.

The review of previous empirical studies captured in the body of knowledge in Nigeria in this direction is as follows: Okoli (2012) conducted a research on the use of accounting to aid management decision making. Accounting information system was analyzed to determine its effect on the qualities of decision on profitability and management effectiveness. The study concluded that management accounting information system has significant relationship with the qualities of management decision and profitability. Similar study was conducted in construction industry by Onaolapo and Odetayo (2012). The result stated that there is a significant relationship between accounting information system and organization efficiency. These result agreed with the findings reported by Awosejo (2013); Oladejo (2013); Yusuf, Isyaka, and Aina (2014). The result was also replicated by Agbaje, Busari, and Adeboye (2014) who examined the extent to which accounting information management has enhanced the profitability of Nigerian banks. The result revealed that accounting information had impacted significantly on the growth of profitability in Nigerian banking industry. Adesina, et al., 2015) also examined the relationship between accounting information and profit planning in Nigerian listed manufacturing companies. Specifically, the study investigated the effect of cost information, sales information and marketing information on profitability. The data analysis results revealed that a positive and significant relationship exists between accounting information and profitability of manufacturing organizations.

In order to have elaborate discussion podium on the relationship between the variables, some empirical studies from internation literature were reviewed as follows: Siamak (2012) studied the usefulness of accounting information system for effective organizational performance. The results showed that MAIS has significant usefulness on organizational performance of listed companies in Dubai financial market but, there has no relationship with

performance management. The findings of this study confirmed the reports of Siyanbola (2012) and Hla and Teru (2015) that analysed the impact of accounting information on management decision making in Malaysia. Al-dmour, Al-Fawaz, Al-dmour, and Allozi (2017) evaluated accounting information system and its role on business performance. The study established that causal links between accounting information system and firm performance existed and that proper accounting information system implementation support competitive advantage. However, Yahiya (2013) evaluated the ability of accounting information systems to support profitability and growth in Jordan industrial sector. The study results disagreed with all the above previous studies in this framework. Therefore, the study concluded that the result cannot be generalized as the some companies in Jordan continue to suffer from a lot of problems in spite of the application of accounting information systems.

Methodology

A descriptive survey research design was employed and 28 quoted fast moving consumer goods manufacturing companies with 5,654 senior staff were used as the study population as listed in table 1. The source list consists of 8 companies representing 30% of the population with 903 management employees distributed among the three tier of leadership. They were selected at random and the criteria for the sample size were that the companies must: (i) be FMCG organizations, (ii) have been in operation or incorporated for a minimum of 40 years, (iii) operate or have head office within Lagos metropolis for accessibility and (iv) have a properly established management accounting unit with professionally qualified accountants as the head. The selected companies are: Cadbury Nigeria Plc; DN Tyre & Rubber Plc; Guinness Nigeria Plc; Nestle Nigeria Plc; PZ Customs Nigeria Plc; Unilever Nigeria Plc; Nascon Allied Industries Plc; and Vitafoam Nigeria Plc. A 21 items, 7 point Likert scale response instrument was generated consisting of section A and B for demographic and inferential data. The scale were: very strong (7), strong (6), fairly strong (5), average (4), fairly weak (3), weak (2), and very weak (1). Out of the 21 questions in the questionnaire, 12 were adopted while the remaining 9 were self-generated. The construct validity conducted exhibited values between .723 and .750 > .05 which confirmed its validity and that the variables could be used for further analysis. The reliability was assured through Cronbach's Alpha coefficient conduced. The (R_c) obtained for the three constructs were .698 .707 and .812 > .05. This confirmed the internal consistency and reliability of the instrument for data collection. The probability is 0.05 that a true null hypothesis will be rejected.

A co-linearity test was conducted and the result obtained shows that the relationships between the predictor and the outcome variable met the assumptions of linear regression. Primary data collected were analyzed. And regression method was used to test the hypotheses with SPSS IBM version 21.

The variables for this study include management accounting information system (MAIS-independent) and effective business decision (EBD - dependent). The model specification is EBD = *f*(MAIS). Where MAIS consists of short term (STmais) covering budgetary planning and control (Bpc) and cost volume profit analysis (Cvpa) and Long term (LTmais) represented by capital expenditure appraisal (Cpa). EBS covers ebs_1

and ebs_2. The linear regression equation used is specified as follows:

$$ebd1 = \beta_0 + \beta_1(STmai) + \varepsilon_1 \text{----------(8)}$$

$$Where\ STmai = Bpc + Cvpa$$

$$(ebd1a = \beta_0 + \beta_1 Bpc + \varepsilon_{1a}\ and\ ebd_{1b} = \beta_0 + \beta_1 Cvpa + \varepsilon_{1b})$$

$$ebd2 = \beta_0 + \beta_2(LTmais) + \varepsilon_2 \text{----------(9)}$$

The general model specification for the study is:

$$EBS = \beta_0 + \beta_1(STmais) + \beta_2(LTmais) + \varepsilon \text{---------- (10)}$$

Where: β_0 = Intercept; β_1 to β_2 = coefficient of equation; ε = error terms; STmais = (Bpc) + (Cvpa) used in hypothesis h01a and h01b.

Analysis, Results and Discussion of Findings

Copies of questionnaire were administered to 903 employees from 8 FMCG companies in Nigeria. 629 valid responses were returned and analysed giving a response rate of 70%. The 274(30%) were either not returned or returned invalid. The three formulated hypotheses were tested and the decision rule was reject null hypothesis if P < .05 and accept if P > .05. The coefficient (R^2) ranges from -1 to +1 signifying the strength of either negative or positive impact of the independent on dependent variable (Okpala, Olabisi & Adebayo, 2017).

Summary Test of Hypothesis (Table 2)

The test conducted and results were:

HO1: The bivariate analysis result of hypothesis h01a showed that R = 0.556 which indicated an average positive impact of Bpc on profitability (Pr.). The R^2 = 0.407 implied that Bpc is responsible for 41% of the variation in Pr. This is confirmed by the F. statistics of 13.649. The impact of Bpc on Pr. is statistically significant (P =.002 < .05). This is confirmed by t- statistic of 3.700. The linear simple equation can be expressed as ebd1a = 2.646+112(Bpc) which implied that a percentage change in Bpc will propel an increase of 12% in Pr. In hypothesis h01b the result indicated that R = 0.658 which confirmed a high positive impact of Cvpa on Pr. The R^2 = 0.533 implied that Cvpa is accountable for 53% of the variation in Pr. and this is confirmed by the F.statistics of 14.465. The effect of Cvpa on profitability is statistically significant (P =.000 < .05). This is confirmed by t-statistic of 4.726. The linear simple equation can be expressed as ebd1b = 2. 807 +236(Cvpa) which implied that a percentage change in Cvpa will propel an increase of 24% in Pr. The combined effect of Bpc and Cvpa showed that R = 0.797 indicating that high positive impact on Ebd on Pr. The R^2 = 0.762 indicated that the combination of Bpc and Cvpa produced 76% variation in Ebd manifesting in profitability of FMCG companies in Nigeria. The linear simple equation can be expressed as ebd1 = 3.860+.438 (STmai) which implied that a percentage change in STmai will drive an increase of 44% in effectiveness business decision making that would increase FMCG companies' ability to profit. The bivariate analysis result of H02 showed that R = 0.768. This indicated that a high positive impact of capital project appraisal (Cpa) on business expansion (Be). The R^2 = 0.745 implied that Cpa is responsible for 75% of the variation on business expansion (Be). This is confirmed by the F. statistics of 18.432. The effect of Cpa on Be is statistically significant (P =.000 < .05) which is supported by t-statistic of 5.469. The linear simple equation can be expressed as Be = 2.066+.311(Cpa).. This

implied that a percentage change in Cpa will impel an increase of 31% in business expansion. A multivariate analysis indicated that both short and long term (STmais and LTmais) MAIS' R = .862 which indicated a high positive effect manifesting in profitability and business expansion. R^2 = 0.855 confirmed MAIS is responsible for 85% variation in EBD. The linear simple equation can be expressed as EBD = 4.860+.452 (MAIS). This implied that a percentage change in long term and short term MAIS will propel an increase of 45% in EBD. Based on empirical evidence from the regression analysis results, the null hypotheses H01 (h01a + h01b) HO2 and H03 were all rejected and alternates not rejected.

Hypotheses 1, 2, and 3 results of this study are in agreement with the reports of researches conducted in this direction in Nigeria (Okoli, 2012; Onaolapo & Odetayo, 2012; Awosejo, 2013; Oladejo, 2013; Yusuf, et al., 2014; Agbaje, et al., 2014; Adesina, et al., 2015). It also agreed with findings of some studies carried out outside Nigeria (Siamak, 2012; Siyanbola, 2012; Hla & Teru, 2015; Al-dmour, et al., 2017). However, the result opposed the findings of Yahiya (2013) who examined the effect of MAIS on profitability and growth in Jordan industrial sector and concluded with an outcome contrary to reports previous studies in this framework.

Summary, Conclusions and Recommendations

The data obtained through the administration copies of structured questionnaire on the tree constructs of this study were tested using regression analysis techniques. The result showed that the independent sub variables (Bpc, Cvpa and Cpa) have significant effect on the dependent sub variables (Pr and Be). The findings were summarized in line with the objectives of the study as follows: (i) Objective 1 was to determine the impact of short term management accounting information system on the business decision. This was achieved through hypothesis 1 test using annual budget and cost volume profit analysis as a short term management accounting information system deputations and profitability as business decision proxy. The result showed that the STmais did not only have a high positive effect but impacted significantly on effective business decision. This is seen from the result sub hypotheses 1a and 1b showing the effect of annual budgetary planning and control and cost volume profit analysis on the profitability of FMCG manufacturers. (ii) Objective 2 was to determine the impact of Long term management accounting information system on the business decision. This was achieved through hypothesis 2 test using capital project appraisal (Cpa) as a long term management accounting information system proxy and business expansion as effective business decision sub variable. The result showed that the STmais have both high positive and significant impact on effective business decision. This was confirmed by the result of hypothesis 2 test which indicted the effect of capital project appraisal on the effective business decision. Question 18 showed that FMCG manufacturing companies only implemented projects and opportunities with positive net present values or projects with IRR equal or above the predetermined rate. Hypothesis 3 is a combination of 1 and 2 designed to examine the combined impact of short and long term management accounting information system on effective business decision. The aim was to determine how both variables of the independent would react when combined to the ability of FMCG manufacturers in Nigeria

to make profit and have sustainable growth. The result showed that the management accounting information system has properly explained effective business decision.

Based on questions 15 and 16 in the questionnaire, the result revealed that FMCG companies within the population have sound management accounting unit with qualified management accountants as the unit heads. They also have modern technology and appropriate software backed by top management support. This is to large extent responsible for the companies' ability for making reasonable profit and experiencing sustainable growth within the industry. The implications of the above findings for FMCG manufacturers' is that they must utilize the management accounting information system to address critical business decision to gain profitability and expansion in their organizations. The study concluded that management accounting information system has a significant impact on effective business decision. This research therefore recommends that FMCG manufacturers' should pay more attention to management accounting information system. The study contributed to literature through the empirical result generated from proper date collection and analysis of the combination of short and long term effect of management accounting information system on effective business decision. The result also validated the findings of previous researchers. The limitation of this study is based on the fact that only few techniques of management accounting information system were used as proxies. Future researchers should expand the scope of MAIS components to have a global view of the effect of management accounting information system on the general business decision.

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Appendix

Table 1: The Study Population
(List of Quoted Fast Moving Consumer Goods Companies in Nigeria - FMCGC)

S/N	Company	Year started operations	Location
1	7p bottling Company Plc	November 1951	Apapa, Lagos State
2	Cadbury Nigeria Plc	January 1965	Ikeja, Lagos State
3	Champion Breweries Plc	1976	Uyo Akwa Ibom State
4	Dangote Flour Mills Plc	1999	Apapa, Lagos State
5	Dangote Sugar Refinery Plc	1981	Apapa, Lagos State
6	DN Tyre & Rubber Plc	1963	Ikeja, Lagos State
7	Flour mills Nigeria Plc	1960	Apapa, Lagos State
8	Golden Guinea Breweries Plc	1963	Umuahia. Abia State
9	Guinness Nigeria Plc	1963	Ikeja, Lagos State
10	Honeywell Flour Mill Plc	1983	Apapa, Lagos State
11	International Breweries Plc	22nd December 1971	Ilesa, Osun State
12	Jos international breweries Plc	December 1978	Jos, Plateau State
13	Mcnichols Consolidated Plc	April 26, 2004	Arepo, Ogun State
14	Multi-Trex integrated foods Plc	30th October, 1999	Warewa, Ogun State
15	Nigeria Flour Mills Plc	29th September, 1960	Apapa, Lagos State
16	Nascon Allied Industries Plc	30th April, 1973	Oregun, Lagos State
17	Nestle Nigeria Plc	1961	Ilupeju, Lagos State
18	Nigerian Breweries Plc	16th November, 1946	Iganmu, Lagos State

19	Nigerian Enamelware Plc	1960	Campbell Street, Lagos
20	Premier breweries Plc	1976	Onitsha, Anambra State
21	PS Mandrides Plc	1949	Bompai, Kano State
22	PZ Cussons Nigeria Plc	1975/Cussons Soap, 1938.	Ilupeju, Lagos state.
23	Rokana Industries Plc	1983	Owerri, Imo State.
24	Unilever Nigeria Plc	1946	Apapa, Lagos State
25	Union Dicon salt Plc	1992	Apapa, Lagos state
26	UTC Nigeria Plc	1st January, 1960	Illupeju, Lagos State
27	Vitafoam Nigeria Plc \	4th August, 1962	Ikeja, Lagos State

Source: Researcher's Field work (2018)

Test of Hypothesis 1 -3

Table 2: Summary of Regression Results

Item	**STmais Bivariate Analysis**		**Mult. Ana.**	**LTmais**	**Mult. Ana.**
	Bpc	**Cvpa**	**(Bpc + Cvpa)**	**Cpa**	**(H01 +H02)**
	h01a	**h01b**	**H01**	**H02**	**H03**
Model Summary					
R	.556	.658	.797	768	.862
R^2	.407	.533	.762	.745	.855
ANOVA[a]					
Sig	.002	.000	.000	.000	.000
F. Stats.	13.649	14.465	16.869	18.432	20.869
Coefficients[a]					
t-Stats	3.700	4.726	6.169	5.469	6.650
(Constant)	2.646	2.807	3.860	2.066	4.860
Bpc, Cvpa, Cpa	.112	.236	.438	.311	.452

Source: SPSS output (2018)