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Two Manufacturing Firms' Decision-Making in Lagos: Implication for Counselling

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Abstract
This paper focuses on two manufacturing firms' decision- making in Lagos, Nigeria Implication for counselling. From the literature, the role of MIS on decision making in two firms Coca-Cola Nigeria Plc and Dangote Flour Mills Plc. were critically examined. This study checks how management information system helps an organization to perform effectively. It also appraised the problems encountered in the installation and structural framework of information system as well as analyzing the socio-economic factors that affects the flow of information in Nigeria manufacturing firms. It was deduced that management information system has significant impact on manufacturing firms' decision making and productivity. In the study, questionnaire was adopted and 100 participants were randomly selected. From the information generated, chi square was used as an analytical tool for the study. Findings revealed that MIS is capable of moving an organization forward by making it perform effectively and function well if guidance counsellors regularly use their professional experience to counsel workers to put up their best. Finally, it is recommended that MIS should form an important unit in all manufacturing firms since the survival of any manufacturing firm in this technological age hinges on it while counselling unit should be set in all manufacturing firms.

Keywords: Manufacturing Firms, Information System, Flow, Installation, Counselling Implication

INTRODUCTION

The changing circumstances and environments have necessitated the need for management information system (MIS) and the concept applies nowadays in all modern organizations because business managers today, are more concerned about the impact of management information system on manufacturing firm decision making than they were even a few years ago. A Management Information System (MIS) is generally thought of as an integrated system providing information to support operations, management and decision-making functions in an organization (Ajayi and Omirin, 2007). MIS involves three primary resources: technology, information and people. All of these resources are important but the most important resource is people. MIS are regarded to be a subset of the overall internal controls procedures in a business, which cover the application of people, documents and procedures used by management accountants to solve business problems such as costing a product, service or a business wide strategy (Terence,2004).

An MIS is basically concerned with the process of collecting, processing, storing and transmitting relevant information to support the management operations in any organizations. It primarily serves the functions of planning, controlling, and decision making at the management level. Some of the other types of information systems include transaction processing systems, which simply record the routine transactions needed to conduct business, like payroll, shipping, or sales orders; and office automation systems, which are intended to increase the productivity of office workers, and provide information in form of reports and displays to managers and many business professionals (Laudon and Laudon, 1999).

Management comprises planning, organizing, staffing, leading or directing, and controlling an organization for the purpose of accomplishing a goal. The essential role of MIS is to bring eligible individuals who would transform raw data into meaningful information to be used presently in future decision making process. It aids the functioning and monitoring of an organization. It also describes the components and resources to ensure the proper functioning of an organization. The use of MIS has changed the physical layout of offices to accommodate local networks and departmental integrated systems. It is also a formalized procedure to provide management at all levels and in all functions with appropriate information from all relevant source to enable them make timely and effective decisions (Al-Zhrani, 2010).

A well planned management information system enables a business firm to determine it information needs in a perspective that is important to its need, which is evaluated in relation to the overall operation of the organization (Andrew 2004). Effective MIS requires operational personnel who are skilled in a wild array of quantitative techniques. All levels of management need information on which to base decisions, plan, organize and control the overall structure of management information system. Information is the key element in any organizational process. It results from the processing of data. It is also a central component of communication process.

It is also a system used in converting data from internal and external sources into information and communicate that information in an appropriate form, to managers at all levels in all functions to enable them to make timely and effective decisions for planning, directing and controlling the activities for which they are responsible (Bee and Bee, 1999). In discussing MIS, the definition and main components of information system are brought into focus. Information system (IS) is a business process, a way to control and manage people, technologies and organizations through the use of information to give a competitive edge (Gates and Hemingway, 2000). It is critical to recognize that information system is not simple information management, nor is it just a set of computer and tools to gather or manipulate data. But it affects deeper underlying concepts such as control, power, performance, measurement, decision making, and accountability. The main components of information system include data collection, data storage, data processing and information analysis. Information system can be conceptualized in terms of three types of systems: Transaction processing system (TPS, Management information system (MIS) and Expert systems. The role of MIS in decision support is best discussed in the context of the subset referred to as Decision Support System (DSS).A DSS is a computer based system (an application program) capable of analyzing an organization (or business) data and them presents it in a way that helps the user to make business decisions more efficiently and effectively. *It is basically an information application which depends on the information already input while answering to a given query for example, a decision support system could* provide:

- Comparative sales figures for one week / month and the next.
- Projected revenue figures based on new product sales assumptions
- Consequences of different decision alternatives, given past experience.

Sometimes there is an overlap between the broad categories of IS and a DSS could be capable of presenting information graphically through an expert system or artificial intelligence (AI). Usually the DSS is used by all levels of people within a business organization. Top level management uses DSS for strategic decisions, middle management uses for tactical decision while first line supervisor's use deploys it for day-to-day operational decisions (Laudon and Laudon 1999).

One potentially powerful resource available to managers is information Technology (IT), consists of many instruments apart from computers (such as pens, paper and erasing fluid), machines (such as typewriters, adding machines, telephones and computers) and systems for gather, storing, processing and communicating information. Though it could also serve as a threat/problem, but the Top management has to be creative and strategic enough through their conceptual and intellectuals capacity to explore full opportunities in all strategic decisions of the enterprise which affect the long term objectives of the Organization. More reports has shown how Information Technology has successfully given some companies an advantage over their competitors both in both in the National and Global Markets.

State of the Problem

It has become a growing concern that despite the impact of management information system on manufacturing firms in the Nigerian economy. Business Executives of manufacturing firms still need to be informed about day-today events so that it can make reasonable and appropriate decision based on facts rather than assumption. Management have not taken the advantage of the subsets of MIS in performing its task which are executive information system (EIS), decision support system (DSS), transaction processing system (TPS).Transaction processing system is an information system used by low level managers in recording the day to day transaction and meeting the needs of their customers on a daily basis. Decision support system is an information system used by tactical managers in taking decisions in an organization (i.e. the information system used in carrying out the intentions of the strategic managers) Executive information system is an information system used in an organization by the strategic managers in formulation of policies, strategizing need as well taking decision for the organization.

However, many manufacturing firms are not aware of the importance of MIS in decision making and solving problem. Those that are aware have not fully incorporated it into their system; this led to making some wrong decision that at times tells negatively on their productivity and profitability. It is pertinent to note that an MIS and its subset are effective if only the management is ready to establish an MIS that is covering all the operations of the organization and control measures are set up to protect it and professionals are the one managing it. Therefore the

study tends to examine the impact of MIS in manufacturing business decision making.

Objectives of the Study

The general objective of the study is to examine the impact of management information system on manufacturing firm's decision making. The specific objectives of the study are:

1. To examine the impact of MIS in manufacturing firms.
2. To examines the effect of MIS in manufacturing business profitability.
3. To examine the effect of MIS in manufacturing business productivity

Research Question

The following research question relevant to this study is:

1. What is the impact of MIS in manufacturing firm's decision-making?
2. What is the effect of MIS on manufacturing firm's profitability?
3. What is the effect of MIS on manufacturing firm's productivity?

Research Hypotheses

H_0: MIS does not assist manufacturing firms in decision making.

H_1: MIS assist manufacturing firms in decision making.

H_0: MIS does not have significant impact on manufacturing firm's profitability.

H_1: MIS has significant impact on manufacturing firm's profitability.

H_0: MIS does not have significant impact on manufacturing firm's productivity.

H_1: MIS has significant impact on manufacturing firm's productivity.

Scope of the Study

The scope of the study covers Coca-Cola Nigeria Plc and Dangote Flour Mills Plc. This company was chosen because they are crucial to the accomplishment of this study. The study will cover a range of five (5) years, so as to ascertain the impact and benefits of management information system in Coca-Cola Nigeria Plc and Dangote Flour Mills Plc from 2007-2012.

Conceptual Frame Work

A management information system (MIS) is a system that provides information needed to manage organizations effectively. Management information systems involve three primary resources: technology, information and people. It's important to recognize that while all three resources are key components when studying management information systems, the most important resource. Management information systems are regarded to be a subset of the overall internal controls procedures in a business, which cover the application of people, documents, technologies and procedures used by management accountants to solve business problems such as costing a product, service or a business wide strategy (Terence,2004:34).

The development and use of management information systems (MIS) is a modern phenomenon concerned with the use of appropriate information that will lead to better planning, better decision making and better results.

The characteristics of MIS in practice include:

1. An information focus, designed for managers in an organization.
2. Structured information flow.
3. An integration of data processing jobs by business function, such as production MIS, personnel MIS
4. Inquiry and report generation, usually with a database.

The concept of information in an organizational sense is more complex and difficult than the frequent use of this common word would suggest. Every society, no doubt, is an information society and every organization is an information organization. Therefore, information is a basic resource like materials, money and personnel. Information can be considered either as an abstract concept (ideas) or as a commodity, usually in the form of letters and reports (Al-Zhrani, 2010). Essentially, information has become a critical resource, just like energy, both of which are vital to the wellbeing of individuals and organizations in the modern world. Like energy and politics, technology is changing the ways in which information is captured, processed, stored, disseminated and used. Information, therefore, like any other resource in an organization, should be properly managed to ensure its cost-effective use. It is an ingredient that is vital to good management and if properly managed, should rank in importance with the organization's personnel, material and financial resources. In an organizational context, it is increasingly being recognized as a resource independent of the technology used in manipulating it.

The implication of this realization is the further recognition that information is the cohesive element that holds an organization together. Information is an unusual commodity, quite unlike most physical goods or consumer durables. Since it is intangible, it is often hard to enforce custody. For this simple reason, it is often crucial to highlight the significant differences between this resource and others when developing a management framework. Its content can be distinguished either by source (internal or external) or by form (numeric or non-numeric). Non-numeric can either be structured or unstructured. Internal information is the information generated within an

organization and generally is of interest and value only to decision makers within that organization. External information can be regarded as the information created by others, which is outside the four walls of the organization, generally by publishers in the form of books or journals, or by Governments, external contacts and the like information; professionals have a surprising range or ideas on what information is. They have not been able to produce a widely acceptable definition (Argyris, 2001:101).

Kumar (2006), opined that in order to define MIS, it must be principally divided into three facets that constitute it – which are management, information and system; Management is the process through which firms organize, initiate and control their operations in their environment, Kumar also stated that information generally refers to analyzed business statues, principles and theories advanced by various macroeconomics. Finally, system according to Kumar refers to a set of elements joined together for a common objective. Based on the foregoing definitions, MIS refers to a system that uses information in order to ensure apt management of businesses. Fundamentally, all the facets of MIS runs concomitantly in order to ensure order to ensure overall efficiency of the whole system, failure in one part means overall failure for the other parts since they are all designed to function independently (Davenport and short 1990).

An effective management information system typically employs computer and other sophisticated technology to process information that reflect the day to day operations of the company. Based on the above, management information system is an integrated manual computer system that provides information to support the operations of managements and the decisions making functions of a company. In most organizations, the management information system covers at least these three systems which are likely to be the following:

1. Personal system: it traces flow of employees in the firm that is, those entering and leaving the firm, their pay, and even seniority location.
2. Commercial system: This traces the flow of material, sub-material etc. into and out of the firms.
3. Financial system: this traces flow of money or funds into, through or out of the firm.

MIS is generally thought of as an integrated system providing information support operations, management and decision-making functions in an organization (Ajayi and Omirin, 2007). Historically, managerial uses of management information system were focused in making internal operations faster, more accurate and more efficient. Today, the more exciting users of management information system are those that provide additional values for external customers. Those managers who find ways to bring additional values to their external customers with the firm management information system will gain additional market shares. It will be noted from the above definitions that the emphasis is on the uses to which the information is put. Planning, directing and controlling are the essential ingredients for management. In essence, the processing of data into information and communicating the resulting information to the user is the key to help the achieve objectives, to plan and control their processes and operations, to help deal with uncertainty, and to help in adapting to change or, indeed, initiating change. The first question we then ask is: What are the management functions that MIS facilitates and what is the various decision levels at which management information can be put into use? It is through a thorough answer to this question that the importance of MIS in management can be realized. However, before we can examine management functions, it is essential we discuss organization processes and structures.

The Role of Management Information System in Manufacturing Firms

Management Information System (MIS) provide regular information to Manufactures to allow them to make decisions based on data rather than guesses. Manufacturers with quality MIS are able to make decisions from an informed stance rather than a haphazard one. / MIS can answer questions such as: Would it be better to add staff at the beginning or end of manufacturing process? How do we choose the most efficient way to use our space? And so on.

The world is developing into an increasingly global market. Economy and countries are also developing and trying to follow the latest technologies to manage the business activities and government service in the best way with high accuracy and safety. Nowadays the managers in manufacturing business start to realize that one tool they need is regular, clear and consistent information to help them in guiding their organizations.

Also MIS can lower operation cost. The use of MIS to share information across functional areas, redundant efforts can be eliminated. This is particularly important as a small business grows. When a company has only a few employees, it is relatively easy for them to be in contact with one another often enough to share knowledge directly. As the number of employee's increases, however, and people are divided into teams or functional areas, it becomes more difficult to keep the lines of communication open and encourage the sharing of ideas. As a result, for example, the sales and marketing departments may each spend time developing descriptions of new products that

highlight different features of the product, creating confusion that ends up with customers not understanding exactly what a product does and leads to product returns or even the loss of customers. If there was a database that contained information about all the products in development that employees were mandated to use, this kind of duplication of effort and the resulting confusion could be avoided. The same principle would apply to any two departments with overlapping functions. MIS can also increase profits by pulling together information, MIS can help identify ways to improve.

Types of Management Information System

Below are the main types applicable in most of the manufacturing firms:

Financial Management Information System

Financial MIS creates reports about a company past and present money activities. The Financial MIS can show a company's profit and losses, financial records about a company that states how the company is doing, decisions on spending and how a company can control cost. The financial MIS in most of times applied in manufacturing industries that use the same financial systems. (Alfred and Rabindra, 1999: 134).

Marketing Management Information System

Marketing management information system handles product creations, sales, prices, advertisements and future business decisions. Marketing MIS makes decisions on product and service appearance. Marketing MIS manages customer contacts, makes questionnaires for customer feedback about their company product or service and tracks customer spending habits.

Human Resource Management Information System

Human Resources MIS manages employees and selection of employees. Human resource MIS looks at needs of the employees, the workforce rules, and the hiring process, training, and job assignments. The company's Human resource MIS is in charge of payroll and medical care for its employees.

Management Information System in Nigeria Manufacturing Firms

Nigeria is an emerging African economy to move towards a technology-driven and high-tech production-based pattern of development and thus replicate the experience of the newly industrializing economics of Africa. In fact, Nigeria has been categorized in the group of countries that have the potential to create new technologies on their own. The development of MIS in Nigeria has eventually contributed to a new level of needed management information this country. The increasing interest among Nigeria organizations and government in MIS handled too much activity in developing techniques and software for data management that helped Nigeria organizations and government institutes to achieve fast development in the field of management and obtaining well-organized institutes especially in the financial sectors where security and accuracy is highly demanded.

Nowadays, MIS is applied in most big and medium organizations in Nigeria (Alexander, 2007: 234). In Nigeria the banking sector has acquired great advantages from applying MIS and provides better services for bankers and investors. Nigeria has several development financial institutions (DFIs) that were setup with specific objectives to develop and promote strategic economic sectors, including the manufacturing, agriculture, infrastructure and maritime sectors, small and medium enterprises (SMEs), and etc. Also the government of Nigeria through the CBN (the Central Bank of Nigeria and manufacturers association of Nigeria (MAN) recognized the importance of MIS to achieve their ultimate goals which is mainly ensuring high security and accuracy as well as provide better feedback and information for decision makers inside these firms, production sector reforms were initiated as part of overall economic reforms in the country and wide ranging reforms covering industry, trade, taxation, external sector, banking and financial markets have been carried out since mid-1990s. The Education Development Plan for Nigeria (2001-2010), henceforth referred to MIS as the Blueprint, takes into account the goals and aspirations of the National Vision Policy to build a resilient nation, encourage the creation of a just society, maintain sustainable economic growth, develop global competitiveness, build a knowledge-based economy (K-economy), strengthen human resource development, and maintain sustainable environment development.

Finally, Management Information Systems play the crucial role of providing a wide range of streamlined options from which decision-makers are able to make their preferred choices. Vitality, this ensures that whatever choices are made by decision makers, the outcome, more often than not, becomes positive. This, as a matter of fact, is the reason why many decision makers tend to prefer using MIS tools when making tough business choices. And as renowned concept, having good decision choices guarantees viable decisions in our business (Vital & Shivraj 2008 and Jawadekar, 2006).

Area of Study

The study will be conducted in the metropolitan city of Lagos. Geographically, the selected firms span through the geo-political coordinates of Nigeria as a result of their large network. The city of Lagos lies in the south-western part of Nigeria, on the Atlantic coasts in the gulf guinea, west of the Niger River Delta located on the longitudes, $3^0$24 and latitude $6^0$27N. The reason why Lagos is chosen is because

it's the commercial Centre of Nigeria and there are many manufacturing firms there.

The Study Population
The population of the study was drawn from 2 selected manufacturing companies in Nigeria. The companies are Coca-Cola bottling company Plc and Dangote flour mills Plc. In this study all staffs constitute the population.

Research Design
The study was executed using a descriptive survey design. Questionnaires were designed to know the personalities of the respondents and contained close ended questions, these questions were based primarily on the hypotheses tested by the researcher.

Sampling Techniques and Sample Size
Sampling technique is the act of the study or an enquiry about the subset of the population from which information concerning the population can be obtained. However, purposive sampling technique was used in selecting the two manufacturing companies. The primary data was sourced directly by the researcher through personal observations, and questionnaire. Purposive sampling technique or method was used in selecting (50) staff from each company. The sample size used is 100.

Sources of Data
The main source of obtaining information is through primary data. We have various methods of collecting primary data as questionnaires, interview, observations, open test etc. but for the purpose of this study, the researcher made use of structured questionnaires. The questionnaire consist of two sections, section A consist of questions on bio data of the respondent and section B consist of question on questions that would be used in solving the research problem.

Data Analysis Techniques
This study employed descriptive non-parametric statistical techniques and adopted, the mean to be precise. The average mean score has become imperative because "LIKERT" attitude of measuring scale was used. Consisting of strongly agree 'agree', 'disagree' and 'strongly disagree'. The following score shall be attributed to each measuring scale accordingly.

- Strongly agree 4; Agree 3; Disagree 2; Strongly disagree 1

Chi-square Test: a detailed analysis was used to understand whether the differences are significant or not.

T The inferential tools used is:
Chi-square X^2 test

G the Descriptive tools used is
Percentage andTables

Model Specification
Y $X_1X_2X_3$
$Y = \alpha_0+\alpha_1X_1 + +\alpha_2X_2++\alpha_3X_3 +\mu_i$
Where α_0 = constant i.e. intercept
A_1, α_2, α_3,= Parameter or slope; X_1 = Manufacturing Decision; X_2 = Profitability; X_3 = Productivity

DATA ANALYSIS/PRESENTATION
In all 100 copies of questionnaires was sent to the two companies (Coca-Cola Nigeria Plc and Dangote Flour Mills Plc) in Lagos State. Which consist of two sections (section A and section B) section A consist of personal data of the respondents while section B gives insights in relation to the question in the study? The table below shows the distribution of the questionnaire sent to the firms.

Questionnaire Distribution and Retrieval
Table 1: Rate of Response

Questionnaire Distribution	Companies		Total Frequency	Percentage (%)
	Coca Cola Plc	Dangote Flour Mills Plc		
Numbers Returned	46	40	86	86
Numbers Not Returned	4	10	14	14
Total	50	50	100	100

Source: Field Survey 2012

A total of 100 copies of questionnaires were administered, of which 86 questionnaire representing (86%) were returned by respondent while 14 questionnaire representing (14%) were not returned. A copy of the questionnaire is attached to the appendix of this study.

SECTION A: Analysis And Interpretation Of Biodata Of The Respondents (Coca-Cola Plc And Dangote Flour Mills Plc)

Table 2: Gender of Respondents

Questionnaire Distribution	**Companies**		**Total Frequency**	**Percentage (%)**
	Coca Cola Plc	**Dangote Flour Mills Plc**		
Male	27	30	57	66.28
Female	19	10	29	33.72
Total	46	40	86	100

Source: *Field Survey 2012*

From the table above, it was observed that most of the respondents are male (66.28%) while few of the respondents are female (33.72%). This table shows that both sexes are proportionally represented because the number of male respondents exceeds that of female respondents with ratio 2:1

Table 3: Age Distribution of Respondents

Age Range	Companies		Total Frequency	Percentage (%)
	Coca Cola Plc	Dangote Flour Mills Plc		
Less Than 20	-	-	-	-
21-30	30	28	58	67.44
31-50	14	9	23	26.74
51 & Above	2	3	5	5.81
Total	46	40	86	100

Source: *Field Survey 2012*

From the table above, no respondents were below 20 years of age, 30 and 28 of the respondents fall within the range of 21 – 30 years of age, i.e. (67.44%), 14 and 9 of the respondent falls within the range bracket of 31 – 50 years of age i.e. (26.74%) while 2 and 3 of the respondents falls within the age above 50 years respectively i.e. (5.81%). The implication of the table above is that more than 60% of the respondents are youth while the other of the respondents were middle age.

Table 4: Respondents Distribution By Work Experience

Work Experience	**Companies**		**Total Frequency**	**Percentage (%)**
	Coca Cola Plc	**Dangote Flour Mills Plc**		
1-5 Years	16	10	26	30.23
6-10 Years	20	25	45	52.33
11 Years And Above	10	5	15	17.44
Total	46	40	86	100

Source: Field Survey 2012

From the above table, the sample size reveals that, (30.23%) of the respondents have 1-5 years of work experience (52.32%) of the respondents have 6 – 10 years' experience, (17.44%) of the respondents have 11 years and above work experience.

Table 5: Respondents Distribution By Unit

Unit	Companies		Total Frequency	Percentage (%)
	Coca Cola Plc	Dangote Flour Mills Plc		
Mis	20	25	45	52.33
Marketing	10	10	20	23.26
Sales	8	5	13	15.12
Others	8	-	8	9.30
Total	46	40	86	100

Source: *Field Survey 2012*

From the above table, the sample size reveals that, (52.33%) of information were gotten from the firms MIS department, (23.26%) of information was gotten from the marketing department, (15.12%) of information was given from respondents in sales department, while (9.30%) was gotten from other departments. Most of the information gotten from respondents in the MIS unit.

Section B: Analysis of Questionnaires

(A) Impact of MIS on manufacturing firm's decision making

Table 6: The use of MIS has assisted them in choosing the best decision among alternatives

Variable	**Companies**		**Total Frequency**	**Percentage (%)**
	Coca Cola Plc	**Dangote Flour Mills Plc**		
Strongly Agree	21	20	41	47.6
Agree	8	7	15	17.24
Disagree	10	8	18	22.91
Strongly Disagree	6	5	11	12.79
Total	46	40	86	100

Source: *Field Survey 2012*

From the above table, we can see that 41 (47.6%) strongly agree, 15 (17.24%) agree, 18 (22.91) disagree, while the remaining 11 (12.79%) strongly disagree. Also from the table above, majority of the respondent strongly agree that the use of MIS in manufacturing firms would help them in making decisions for the Coca-Cola

Chi-square method is used in analyzing the hypothesis earlier proposed in the study. The adoption of the chi-square, a man parametric statistics method is very deliberate.

All data technique was based on frequency distribution and chi-square distribution analysis. The formula for chi-square is given as:

$X2 = E (FO-FE)^2$ OR $X^2 = e (f_o-F_e)$

Where:

X^2 = chi square calculated

F_o = observed frequency distribution

F_e = expected frequency in the hypothesis

E = summation

R = total number of row

C = total number of column

Degree of freedom (df) = (r-l) (c-l)

The hypotheses were tested at 0.05 confident levels (p) and 0.05 level of significance.

The decision rules for chi-square is; if computed value is greater than the table value, accept the alternative hypothesis and if otherwise, it is rejected.

That is if $X^2_c > X^2_t$ reject h and accept H_1

$X^2_c < X^2_t$ accept h and accept H_1

Restatement Of Hypotheses

Hypotheses One

H_0: MIS does not assist manufacturing firms in decision making

H_1: MIS assist manufacturing firms in decision making

Hypotheses Two

H_0: MIS does not have significant impact on manufacturing firm's profitability

H_1: MIS has significant impact on manufacturing firm's profitability

Hypotheses Three

H_0: MIS does not have significant impact on manufacturing firm's productivity

H_1: MIS has significant impact on manufacturing firm's productivity

TESTING OF HYPOTHESES AND DISCUSSION OF REALITY

Hypothesis one:

The hypothesis is intended to determine whether MIS assist manufacturing firms in decision making. For the purpose of testing these hypothesis tables 9, 10, 11, 12, 13 and 14 were used in the analysis. The hypotheses are stated below:

H_0 = (Null) MIS does not assist manufacturing firms in decision making

H_1 = (alternate) MIS assist manufacturing firms in decision making

Observed frequencies

Table	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
9	41	15	18	11	86
10	32	29	11	9	86
11	32	38	16	-	86
12	25	39	12	-	86
13	44	29	13	-	86
14	39	31	9	-	86
TOTAL	213	181	79	20	516

$$E = \frac{RT \times CT}{GT}$$

Where: RT = Total Role

CT = Total Column

GT = Gross Total

$$1, 1 = \frac{213 \times 86}{516} = 35.5$$

$$2, 1 = \frac{181 \times 86}{516} = 30.17$$

$$3, 1 = \frac{79 \times 86}{516} = 13.17$$

$$4, 1 = \frac{20 \times 86}{516} = 3.3$$

Analysis of data

Cell	O	E	o-e	$(o-e)^2$	$(o-e)^2/_e$
1,1	41	35.5	5.5	30.25	0.85
2,1	15	30.17	-15.17	230.13	7.63
3,1	1	3.83	-2.83	8.01	2.09
4,1	18	13.17	4.83	23.33	1.77
5,1	11	3.33	7.67	58.83	17.67
1,2	32	35.5	-3.5	12.25	0.35
2,2	29	30.17	-1.17	1.37	0.05
3,2	5	3.83	1.17	1.37	0.36
4,2	11	13.17	-2.17	4.71	0.36
5,2	9	3.33	5.67	32.15	9.65
1,3	32	35.5	-3.5	12.25	0.35
2,3	38	30.17	7.83	61.31	1.99
3,3	-	3.83	-3.83	14.67	3.83
4,3	16	13.17	2.83	8.01	0.61
5,3	-	3.33	-3.33	-11.09	3.33
1,4	25	35.5	10.5	110.25	3.11
2,4	39	30.17	8.83	77.97	2.58
3,4	10	3.83	6.17	38.07	9.94
4,4	12	13.17	-1.17	1.37	0.10
5,4	-	3.33	-3.33	11.09	3.33
1,5	44	35.5	8.5	72.25	2.04
2,5	29	30.17	-1.17	1.37	0.05
3,5	-	3.83	-3.83	14.67	3.80
4,5	13	13.17	-3.83	0.03	0.002
5,5	-	3.33	0.17	11.09	3.33
1,6	39	35.5	-3.33	12.25	0.35
2,6	31	30.17	0.83	0.69	0.023
3,6	7	3.83	3.17	10.05	2.62
4,6	9	13.17	-4.17	17.39	1.32
5,6	-	3.33	-3.33	11.09	3.33
TOTAL					86.8352

Chi-square X cal = 86.8352

Degree of freedom = (r-l) (c-l)

(5-1)x(6-1)

4 x 5 = 20

Level of Significance
Degree of freedom of 20 with a level to significance 0.05
X Tab = 31.4

Final Decision
From the above X cal is 86.8352 is greater than X tab which is 31.4 at 0.05 level of significance and at a degree of freedom of 20. Therefore, alternative hypothesis H_2 is accepted but H_0 is rejected, which means that MIS assist manufacturing firms in decision making.

Hypothesis Two
This hypothesis is intending to determine whether MIS has significant impact on manufacturing firm's profitability. For the purpose of testing this hypothesis table 15, 16, 17, 18, 19 and 20 will be used in this analysis. The hypothesis is stated below:

H_0 = (Null) MIS does not have significant impact on manufacturing firm's profitability.

H_1 = (alternate) MIS has significant impact on manufacturing firm's profitability.

Observed Frequency

Table	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
15	34	33	11	3	86
16	34	39	8	3	86
17	36	32	9	5	86
18	33	37	8	4	86
19	33	31	8	6	86
20	36	32	10	4	86
TOTAL	206	204	54	25	516

$$E = \frac{RT \times CT}{GT}$$

Where: RT = Total Role
CT = Total Column
GT = Gross Total

$$1, 1 = \frac{206 \times 86}{516} = 34.33$$
$$2, 1 = \frac{204 \times 86}{516} = 34$$
$$3, 1 = \frac{27 \times 86}{516} = 4.5$$
$$4, 1 = \frac{54 \times 86}{516} = 9$$
$$5, 1 = \frac{25 \times 86}{516} = 4.17$$

Analysis of data

Cell	O	E	o-e	$(o-e)^2$	$(o-e)^2/_e$
1,1	34	34.33	-0.33	0.11	0.003
2,1	33	34	-1	1	0.03
3,1	5	4.5	1.5	2.25	0.5
4,1	11	9	2	4	0.44
5,1	3	4.17	-1.17	1.37	0.33
1,2	34	34.33	0.33	0.11	0.003
2,2	39	34	5	25	0.74
3,2	2	4.5	2.5	6.25	1.39
4,2	8	9	1	1	0.11
5,2	3	4.17	1.17	1.37	0.33
1,3	36	34.32	1.67	2.79	0.08
2,3	32	34	2	4	0.11
3,3	4	4.5	-0.5	0.25	0.05
4,3	9	9	0	0	0
5,3	5	4.17	0.83	0.69	0.16
1,4	33	34.33	-1.33	1.77	0.05
2,4	37	34	3	9	0.26
3,4	4	4.5	-0.5	0.25	0.06
4,4	8	9	-1	1	0.11
5,4	4	4.17	-0.17	0.03	0.01
1,5	33	34.3	-1.33	1.77	0.05
2,5	31	34	-3	9	0.26
3,5	8	4.5	3.5	12.25	2.72
4,5	8	9	-1	1	0.11
5,5	6	4.17	1.83	3.35	0.80
1,6	36	34.33	1.67	2.79	0.08
2,6	32	34	-2	4	0.12
3,6	4	4.5	-0.5	0.25	0.06
4,6	10	9	1	1	0.11
5,6	4	4.17	-0.17	0.03	0.01
TOTAL					9.09

Chi-square X cal = 9.09
Degree of freedom = (r-l) (c-l)
(5-1)x(6-1)
4 x 5 = 20

Level of significance
Degree of freedom of 20 with a level to significance 0.05
X Tab = 31.4

Final Decision

From the above X cal is 9.09 is less than X tab which is 31.4 at 0.05 level of significance and at a degree of freedom of 20. Therefore, alternative hypothesis H_1 is rejected, while H_0 is accepted, which means that MIS does not have significant impact on manufacturing firm's profitability.

Hypothesis Three

The hypothesis is intended to determine whether MIS has significant impact on manufacturing firms productivity for the purpose of testing this hypothesis table 21, 22, 23, 24, 25 and 26 will be used in the analysis. The hypothesis is stated below:

H_0 = (Null) MIS does not have significant impact on manufacturing firm's productivity.
H_1 = (alternate) MIS has significant impact on manufacturing firm's productivity.

Observed Frequency

Table	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
21	30	27	15	9	86
22	35	33	8	7	86
23	35	40	6	3	86
24	40	34	28	2	86
25	40	34	6	3	86
26	35	40	6	4	86
TOTAL	215	208	49	28	516

$$E = \frac{RT \times CT}{GT}$$

Where: RT = Total Role
CT = Total Column
GT = Gross Total

$$1, 1 = \frac{215 \times 86}{516} = 35.83$$

$$2, 1 = \frac{208 \times 86}{516} = 34.67$$

$$3, 1 = \frac{16 \times 86}{516} = 2.67$$

$$4, 1 = \frac{49 \times 86}{516} = 8.17$$

$$5, 1 = \frac{28 \times 86}{516} = 4.67$$

Analysis of data

Cell	O	E	o-e	$(o-e)^2$	$(o-e)^2/_e$
1,1	35.83	30	5.83	33.99	1.13
2,1	34.67	27	7.67	58.82	2.18
3,1	2.67	5	-2.33	7.76	1.55
4,1	8.17	15	-6.83	46.65	3.11
5,1	4.67	9	-4.33	18.75	2.08
1,2	35.83	35	-0.83	0.69	0.02
2,2	34.67	33	34	1156	35.03
3,2	2.67	3	-0.33	0.11	0.04
4,2	8.17	8	-0.17	0.03	0.004
5,2	4.67	7	-2.33	5.43	0.78
1,3	35.83	35	0.83	0.69	0.02
2,3	34.67	40	-5.33	28.41	0.71
3,3	2.67	2	0.67	0.45	0.22
4,3	8.17	6	2.17	4.71	0.78
5,3	4.67	3	1.67	2.79	0.93
1,4	35.83	40	-4.17	17.39	0.43
2,4	34.67	34	0.67	0.45	0.01
3,4	2.67	2	0.33	0.45	0.22
4,4	8.17	8	2.17	0.03	0.004
5,4	4.67	2	1.67	7.13	3.56
1,5	35.83	40	0.83	17.39	0.43
2,5	34.67	34	5.33	0.45	0.01
3,5	2.67	3	1.67	0.11	0.04
4,5	8.17	6	2.17	4.71	0.79
5,5	4.67	3	1.67	2.79	0.93
1,6	35.83	35	0.83	0.69	0.02
2,6	34.67	40	5.33	28.41	0.74
3,6	2.67	1	1.67	2.79	2.79
4,6	18.17	6	2.17	4.71	0.79
5,6	4.67	4	0.69	0.45	0.11
TOTAL					99.46

Chi-square X cal = 59.46

Degree of freedom = (r-l) (c-l)
(5-1)x(6-1)
4 x 5 = 20

Level of significance
Degree of freedom of 20 with a level to significance 0.05
X Tab = 31.4

Final Decision:

From the above X cal is 59.46 is less than X tab which is 31.4 at 0.05 level of significance and at a degree of freedom of 20. Therefore, alternative hypothesis H_1 is accepted, while H_0 is rejected, which means that MIS has significant impact on manufacturing firm's productivity.

COUNSELLING IMPLICATION

Counselling for Entrepreneurship Development at the Secondary School Level

The main objective of counselling in manufacturing firms is to give support to decision makers and staff in dealing with challenges and the serious problems confronting these days. The guidance counsellor takes time to guide the organizations to make good choices of efficient, productive and dedicated staff members. Effective guidance counselling is achieved through performance of one or more of the following counselling activities: advice, reassurance, release of emotional tension, clarified thinking and reorientation to enable the staff members give their very best to the various manufacturing firms they represent and on the other hand, the management is expected to remunerates her staff as at when due, provide counselling opportunity for them, create avenue for training, seminars, conferences , workshops and promotions.(Payne, 2006).

SUMMARY

This paper focuses on the impact of MIS on manufacturing firm's decision making. After all necessary statistical analysis has been carried out on this data of the study, the following findings were made. Observing chi-square calculated for this research hypothesis one, it was discovered that the chi-square value 86.84 was greater than the tabulated value 31.4, for this, the null hypothesis which states that MIS does not assist manufacturing firms in decision making is rejected. This means that MIS assist manufacturing firms in decision making.

Also, for the hypothesis two, the calculated chi-square statistics value of 9.09 was less than the tabulated value of 31.4, for this, the null hypothesis which states that MIS does not have significant impact on manufacturing firms profitability is accepted. Thus MIS has no significant relationship with manufacturing profitability. This is due to the fact that MIS is embraced by manufacturers to improve productivity and not because of profit improvement.

More so, for the hypothesis three, the chi-square calculated of 59.96 is greater than the tabulated value of 31.4; therefore, the null hypothesis which states that MIS does not have significant impact on manufacturing productivity is rejected. This implies that MIS has significant impact on manufacturing productivity.

CONCLUSION

From the analysis of the results, it can be concluded that the Management information System adopted by Coca-Cola Nigeria Plc and Dangote Flour Mills Plc have been averagely effective. The respondent have appreciated the fact that an effective Management Information System is very essential if an organization wants to remain relevant in the industry. The role an effective Management Information System plays in an organization are quite enormous and cannot be over emphasized. In conclusion, with all the findings earlier stated above, it would be noted that MIS has significant impact on the manufacturer's performance and decision making.

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RECOMMENDATIONS

The survival of any business unit or manufacturing firm in this technological era depends purely on the manufacturer's ability to include the use of MIS in her day to day activities. The following suggested recommendations are as follows:

1. There should be the introduction and operation of central-data-base management system through which information can be produced and communicated to various users at any point in time within the firm.
2. There should be flexibility in the nature/pattern and structure of management system in organizations so as to permit informed and easy information flow and accessibility to all information end-users.
3. There should be more seminars and training for the staff in the firm to improve their performance.
4. The company should pay more attention to communication through the media agencies. This goes a long way to promoting the company's control of the market.
5. The company should develop, acquire appropriate and suitable computer software and programme to meet it ever growing growth and expansion. In the same vein, skillful and experienced IT workers should be employed to manage the IT department of the firm. This is because without competent staff no appreciable impact can be \effected in the firm.
6. Enough time should be allotted for the transmission of information so as to guide against error.
7. There should be effective communication at all levels of the firm, so as to aid management control and create good image. Effective communication is also essential for forecasting mutual understanding and minimizing conflicts between management and labour.
8.

9. Guidance counsellors should be trained and deployed to schools where none-exist. Schools with large population should be given adequate number of counsellors for effective discharge of their duties.

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