



DETERMINING THE INFLUENCES OF MIS ON CORPORATE DECISION MAKING

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Abstract

Decision making generally is a function of information available to the managers. Hence, organizations require effective information system to aid decision making. With effective information system in place, corporate decision becomes seamless and less erroneous. The kind of information system designed for an organisation would determine decision process and consequently the outcome. This paper focuses on the influences of management information systems (MIS) on effective decision making at First Bank of Nigeria, Samaru Business Office, Zaria. The target population was forty-five (45). The study did not require sampling since the population is marginal. Demographic data of the respondents were analysed by means of descriptive statistics, while multiple regression was the technique used in the test of the null hypotheses. Finding from the study indicates that access to required information influences decision making. More so, the study also shows that nature of data collection and presentation style determines the quality of decision making. The study therefore concludes that all the three (3) surrogates used in the research have significant positive influence on corporate decision making. It is, thus, recommended that FBN, Samaru should make concerted efforts to sustain and even strengthen their existing management information systems for further enhancement of the effectiveness of corporate decision making.

Keywords: Decision Making, Management Information System, Bank

1. Introduction

Management at all levels requires an information system that will provide sufficient and accurate information for their decision-making responsibilities. For decision making has always been integrated part of the management in any organization. It involves selecting the course of action among various alternatives. This creates the need for a Management Information System (MIS) that will provide both relevant information and the ability to make effective decision by the management. Hence, an effective Management Information System is critical to every business organization.

Effective and efficient decision making is considered as a factor that determines the survival of organisations. However, decision making overtime has been impeded by the non-availability of required information to exploit opportunities in the business environment. The challenge that has been attributed to the lack of effective information system that would provide the organization with adequate information in their decision-making activities at all management levels. Hence, management Information System (MIS) is needed to be put in place to mitigate lack of access, poor presentation and data volume and quality.



It is key to note that, managers hardly get all the necessary information that are needed for proper planning and decision-making without moving from one place to another, because of lack of competent and organized MIS. Therefore in such cases, most decisions have to be made on incomplete knowledge either because of non-availability of information or high cost of getting required information. There is nothing more treacherous than attempting to make precise decision on the basis of incomplete information.

This study therefore, assess the extent to which MIS influences effective decision-making on the basis of access to information, extent to which data collection influences corporate decision making, and as well to assess how presentation of information influences corporate decision making. Before now, Al habri and Sonawane (2016) in their survey of 45 industrial companies in India found that MIS has significant positive relationship with managerial decisions. Munirat, Sanni, and Kazeem (2014) using Z-test to determine the impact of MIS to the performance of business organisations in FCT-Nigeria, they reported positive significant relationship between the variables and recommended flexibility and deployment of appropriate computer software to support the growing need of MIS in the sampled organisations. Similarly, Omoyayo (2018) examined the impact of management information system to business organizations using chi square recommended the use of MIS in the areas of investment appraisal, prospective investor, valuation of business, company tax computation and employee evaluation. Olumoye (2013) in a survey responses from senior management staff of five selected insurance companies examined the relationship of information systems and decision-making. Chi-square indicated that information system expunges traditional, geographical and marketing limitations.

2. Literature Review

The concept of the MIS has evolved over a period of time comprising many different characteristics of the organizational function. MIS is a necessity of all organizations. Al-Mammary *et al.* (2014) sees MIS as one of the most important tools in any organization, which aims to provide reliable, complete, accessible, and understandable information in a timely manner to the users of the system. Management information systems assisted in automating tasks. Automation can save time, money, resources, reduce employee's staff, and enhance organizational workflow. Management Information Systems (MIS) are information systems, typically computer-based, that are used within an organization. WorldNet describes an information system as "a system consisting of the network of all communication channels used within an organization". A management information system may also be defined as "a system that collects and processes data (information) and provides it to managers at all levels who use it for decision making, planning, programme implementation, and control." An information system is comprised of all the components that collect, manipulate, and disseminate data or information. It usually includes hardware, software, people, communications systems such as telephone lines, and the data itself. The activities involved include inputting data, processing of data into information, storage of data and information, and the production of outputs such as management reports. In business, information systems support business processes and operations, decision-making, and competitive strategies (Awad, 1988; McLeod, 1998).

Yousef (2010) evaluate the role of MIS in administrative decision-making at the University of Jordan. The study aimed to explore the subject of management information system in general, and assess the role of the employed information systems in administrative decision making at



the University of Jordan. In addition, the study investigated the relationship between MIS and quality of information to administrative decision making. The study found that the relationship between MIS and quality of information contribute was positive. Which means that good quality management information system leads to good decision. A study by Alkhaffaf (2012) investigate the role of information systems in decision making: the case of Jordan Bank” identified the types of computer based information systems that is used in the Bank. The study used empirical study and a structured questionnaire. The study found a positive correlation between information systems and the process of decision-making. In addition, the result showed that the Jordan bank relies heavily on a number of technologies used by IS to implement their key activities. Another study by khresat (2015) on the effect of management information system on organizational performance. The study applied a sample of 100 employees from 10 branches of telecommunication companies randomly. Findings revealed that employees have positive attitudes towards management information system (MIS). In addition, the study result found that there is a statistical significant association between management information system and organizational performance in telecommunication companies in Egypt.

Asemi (2011) examined the role of management information system (MIS) and Decision Support System (DSS) for manager’s decision-making process. It was found that MIS is best suited to identify problems and help management to make suitable decisions. On the other hand, DSS were tailored to the specific need of individual and group managers. Therefore, result showed that DSS can extend its support to the same steps of decision-making process and has more roles in decision-making and problem solving than MIS. According to a study by Gil (2009), management information system has an influence on flexibility-based strategic performance and cost-based strategic performance, taking into account the decentralization of responsibilities, updating customer knowledge and customer participation in management, the cooperation with other units with the scope of increasing the firm budget, and actualization and use of management information. Furthermore, greater management information system capability leads to a higher degree of strategic performance. Slotegraaf and Pauwels (2008) studied how different team compositions interact with a management information system, directly influencing strategic performances, focused on flexibility and the reduction of costs. The results exhibit how the effect of management information system on strategic performance is supervised and governed by top management team diversity. The extent to which the management information system is providing information that relates to possible future events, efficiency, output rates, information on the effect of various events that also relate to the impact that the employees decision has on the performance of other departments.

Kirsch (1997) shows that there is a direct link between behaviour control, outcome control, clan control, self-control with firm performance, and with the moderating effect of the complexity risk. Kirsch (1997) tried to determine whether the user anticipated the development team to follow an intelligible written series of steps toward the attainment of project goals or if the user presumed the development team to follow explained written system development rules. Furthermore, based on the data obtained from previous research on management information systems projects, behaviour, outcome, and self-control are determined to be undoubtedly linked with the system performance of projects. However, complexity risk generates a mixed moderating effect on the relationship between control and performance. The research model tried to determine if, in the presence of a high complexity risk, the impact of behavior and self-



control on performance are low, whereas the effectiveness of outcome and clan control increases. Overall, there is an optimistic tone for control as an important causal driver for comprehensive performance. According to a study by Qrunfleh and Tarafdar (2014), a connection between supply chain (SC) strategy and supply chain information systems (IS) strategy was examined, and its impact on supply chain performance and firm performance. The results also support the proposition that an organization's ability to use supply chain strategy to support its core competencies is dependent on management information systems' functional capabilities.

Prior research by Maiga and Jacobs (2003) on the interface between management control and information technology is an underdeveloped research area with a knowledge gap concerning its implications for financial performance. The present research model analyzes the interaction effect of cost control systems and information technology integration on company financial performance. The conducted research showed that while information technology integration and cost control systems hold no significant influence on plant financial performance, they do associate to positively influence manufacturing plant financial performance. According to Ragu *et al.* (2004) their conceptual model emphasizes the link between top management support and information system performance, and top management support proved to be a significant factor in determining the efficiency of the information system function in an organization and the direct and indirect relations described in the model between top management support and IS performance were supported by the results Wernerfell (1998). The variables that had a moderating effect on this relationship comprehended the structure of the information system, integration of the information system, current and future portfolios of the information systems and the different modes of information system management controls. According to the research conducted by Lai *et al.* (2004) a link was established between sharing environmental management information with customers and suppliers and the overall comprehensive firm performance, which included environmental, cost and profit performance and the mediation effect of environmental munificence Slotegraaf and Pauwels (2008). The previous studies highlighted the importance of information exchange with supply chain partners for achieving performance gains. Environmental management information contributes more to the long-term than to the short-term influences on overall firm performance, enhancing the comprehensive operational effectiveness.

From the review of previous studies, the gaps identified are scope methodology and findings gap. The scope gaps are place, period and variables are not the same with this present study. Also, the sample frame and statistical tools for the analysis are different. This is because some studies used parametric statistics and some used nonparametric statistics in drawing conclusions. Therefore, this study is different. It intends to contribute to knowledge by investigating the relationship between three distinctive variables (information access, data collection and information presentation) and MIS effectiveness in corporate decision making process in First Bank Nigeria Samaru, Zaria.

3. Methodology

This study obtained primary data by using questionnaire to gather relevant information. The population of this study was the entire staff of First Bank Nigerian, Samaru Zaria branch, and the total number of staffs was 45 using Yaro Yamani's sample size formula. In presenting the



data, the descriptive and inferential statistical techniques were used. This study used both descriptive inferential statistical, and the multiple-regression is stated below

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3, \dots \dots \dots 1$$

Where Y is the estimation of the needy variable, *a* (Alpha) is the consistent or catch; *b*₁ is the slope (Beta co-efficient) for *x*₁; *x*₁ First explanatory variable that is clarifying the fluctuation in Y; *b*₂ is the slope (Beta co-efficient) for *x*₂; *x*₂ Second explanatory variable that is clarifying the fluctuation in Y; *b*₃ is the slope (Beta co-efficient) for *x*₃; *x*₃ Third free factor that is clarifying the change in Y.

4. Result

Data collected through questionnaire were designed to be analyzed in this chapter in order that the questions raised in the research can be effectively answered. A total of 45 questionnaires were administered, 45 copies were returned by the respondents.

Table 1:

	Frequency	Percent
<i>Gender</i>		
Male	34	75.6
Female	11	24.4
<i>Age</i>		
20-40 years	40	88.9
41-60 years	5	11.1
<i>Education</i>		
National Diploma	18	40.0
NCE	15	33.3
First Degree	10	22.2
Masters Degree	2	4.4
<i>Nature of work</i>		
Operation	28	62.2
Marketing	17	37.8
<i>Years of working in FBN</i>		
1-5 years	19	42.2
5-10 years	20	44.4
Above 10 years	6	13.3
<i>level of Management</i>		
Top	3	6.7
Middle	24	53.3
Lower	18	40.0
Total	45	100

Source: Field Survey (2019).

Table 1 shows that 34 (75.6%) of the respondents are male, while 11 (24.4.1%) of the respondents are female. Making a total of (100%), that is majority of the respondents are male. For age it shows that 40 (88.9%) of the respondents fall within the age group of 20 to 40 years, while 5 (11.1%) of the respondents are within the age of 41 to 60 years. Making a total of (100%) that is majority of respondents fell within the age group of 20 to 40. For education it shows that 18 (40.0%) of the respondents fall under national diploma, 15 (33.3%) of the respondents fall under NCE, 10 (22.2%) of the respondents fall under first degree while 2



Table 2: Statistics Table

	N	Mean	Median	Std. Dev.	Minimum	Maximum
<i>Corporate decision making</i>						
Does your organization have a Management Information System?	45	2.7	3	0.50452	1	3
Do you participate in your organization's decision making process	45	2.8	3	0.34378	2	3
Does Management information System have an impact on your decision making?	45	2.7	3	0.50452	1	3
Under what circumstance do you make decisions in your organization	45	2.51	3	0.58861	1	3
<i>Accessibility to information</i>						
Decision making relies fully upon accessibility to information in your organization	45	2.8	3	0.34378	2	3
Your organization depends on computers to gain access to information.	45	2.7	3	0.50452	1	3
Effective decision making relies upon the quality of data accessible to your organization	45	2.7	3	0.50452	1	3
Information technology limits your ability to access information	45	2.89	3	0.27979	2	3
<i>Data collection</i>						
Decision making relies fully upon data collection in your organization	45	2.8	3	0.34378	2	3
Effective decision making relies upon the quality of data collected by your organization	45	2.7	3	0.50452	1	3
Your organization depends on computers to collect data	45	2.82	3	0.35604	2	3
Information technology limits your ability to collect data	45	2.73	3	0.45974	1	3
<i>Presentation of information</i>						
Your organization depends on computers to present information	45	2.89	3	0.27979	2	3
Decision making relies fully upon data collection in your organization	45	2.8	3	0.34378	2	3
Information technology limits your ability to collect data	45	2.81	3	0.45588	1	3
Your organization depends on computers to collect data	45	2.82	3	0.35604	2	3

Source: Field Survey (2019)

(4.4%) of the respondents fall under masters degree. Making a total of (100%) that is majority of respondents are national diploma holders. The nature of work shows that 28 (62.2%) of the respondents fall under operations while 17 (37.8%) of the respondents fall under marketing. Making a total of (100%) that is majority of respondents fall under operations. For number of years spent in FBN it shows that 19 (42.2%) of the respondents have been FBN for 1 to 5 years, 20 (44.4%) of the respondents have been with FBN for 5 to 10 years while 6 (13.3%) of the respondents have been with FBN above 10 years. Making a total of (100%) that is majority of



the respondents has been with FBN for 5 to 10 years. In level of management it shows that 3 (6.7%) of the respondents belong to top management, 24 (53.3%) of the respondents belong to middle level and 18 (40.0%) belong to lower level management. Making a total of (100%). i.e. Majority of respondents belong to middle level management.

Table 3: Statistics Table; Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
D_M	45	1.75	3.00	2.6778	.35001	-1.074	.354	.288	.695
A_T_I	45	2.00	3.00	2.7722	.32123	-1.157	.354	-.122	.695
D_C	45	1.88	3.00	2.7639	.35075	-1.301	.354	.357	.695
P_O_I	45	2.25	3.00	2.8306	.25722	-1.314	.354	.308	.695
Valid (list wise)	N 45								

Source: Field Survey (2019)

From Table 3, descriptive statistic of both dependent variable (Decision Making) and the independent variables (Accessibility to Information, Data Collection and Presentation of Information) are explained. The minimum, maximum, mean, standard deviations, skewness, kurtosis of each variable were analyzed. The analysis indicates that, there is a significant relationship between Accessibility to information, Data collection and Presentation of information have the mean score of 2.7722, 2.7639 and 2.8306 respectively, with standard deviation of 0.32123, 0.35075 and 0.25722 respectively. The analysis shows that, the value of skewness 0.354 each are on normal distribution curve because, skewness range from -1.96 to 1.96 and the values of skewness fall within the range. Also the value of kurtosis representing 0.695 each are concentrated slightly above the centre which is not more than the standard value required (0.7).

Table 4: Correlation

		D_M	A_T_I	D_C	P_O_I
D_M	Pearson Correlation	1	.886**	.847**	.693**
	Sig. (2-tailed)		.000	.000	.000
	N	45	45	45	45
A_T_I	Pearson Correlation	.886**	1	.914**	.790**
	Sig. (2-tailed)	.000		.000	.000
	N	45	45	45	45
D_C	Pearson Correlation	.847**	.914**	1	.916**
	Sig. (2-tailed)	.000	.000		.000
	N	45	45	45	45
P_O_I	Pearson Correlation	.693**	.790**	.916**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	45	45	45	45

Source: Researcher's Survey (2019)



Table 4 indicates that there is positive correlation relationship between dependent variable (Decision Making) and independent variables (Accessibility to information, Data Collection and Presentation of information). The relationship between the co-efficient value of Decision Making and Accessibility to Information are significant at 1% (.000) and its coefficient value is 0.886 which shows a strong positive correlation. Likewise, the relationship between the co-efficient value of Decision Making and Data Collection are significant at 1% (.000) and its coefficient value is 0.887 which also indicates a strong positive correlation. Lastly, the relationship between the co-efficient value of Decision Making and Presentation of Information are significant at 1% (.000). The coefficient value of Time Deadline is 0.693 which means there is a strong positive correlation between the variables.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig.F Change	
1	.901 ^a	.811	.797	.15753	.811	58.738	3	41	.000	1.913

Source: Field Survey (2019); Note: a Predictors is (Constant), Presentation of information, Accessibility to information, Data collection, b is Dependent Variable: Decision Making.

From Table 5, the coefficient of correlation value (R) is given as 0.811. This figure explained that there is positive relationship up to 81% between the dependent variable (Decision Making) and independent variables (Accessibility to Information, Data Collection and Presentation of Information). The adjusted R-square for the number of independent variables and the number of cases was done through SPSS which is 0.797. The higher the R-Square the lower the standard error of estimation of the residual as it is shown in the table (0.15753). The R-square is given as 0.811. The value explained 81% of variance in Decision Making of First Bank Nigeria, Samaru Zaria, while the remaining 19% is explained by Accessibility to Information, Data Collection and Presentation of information.

Table 6: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.373	3	1.458	58.738	.000 ^b
	Residual	1.017	41	.025		
	Total	5.390	44			

Source: Field Survey (2019); Note: a is Dependent Variable: Decision Making; b is Predictors: (Constant), Presentation of information, Accessibility to information, Data Collection

Table 6 shows the mean square of regression score as 1.458 and the residual value as 0.025. It also depicts the significant level of the three independent variables i.e. (Accessibility to Information, Data collection and Presentation of Information) on the table which is less than 0.00 which means that the stated variables have positive significant impacts on Decision making of First Bank Nigeria, Samaru Zaria. Also, since F statistics is 58.738 Anova Table is significant.

From the multiple regressions equation, given the intercept value for decision making is 0.508. Also, a 1% increase in Accessibility to Information will increase FBN's effectiveness in Decision Making by 0.633, likewise a 1% increase in Data Collection effectiveness will also



Table 7: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
(Constant)	.508	.332		1.529	.134					
1 A_T_I	.633	.191	.581	3.315	.002	.886	.460	.225	.150	6.675
D_C	.630	.268	.632	2.355	.023	.847	.345	.160	.064	15.622
P_O_I	-.469	.241	-.345	-1.945	.059	.693	-.291	-.132	.147	6.818

Source: Field Survey (2019); Note: Dependent Variable: Decision Making

increase FBN's effectiveness in Decision Making by 0.630 and lastly, a 1% increase in Information Presentation will not increase FBN's effectiveness in decision making. This indicates that if FBN puts Accessibility to Information and Data collection into consideration, it will definitely have a positive impact on their overall performance.

5. Conclusion and Recommendations

Management information system is an important management tool which business organizations must not fail to utilize. Information is indeed a vital means required for effective decision making, controlling, planning and appraising a company's operation. Business organization can gain competitive excellence if an effective management information system is put in place. In order to get accurate business information at the right time, MIS must be put in place to facilitate prompt management decision making. MIS is vital in this progressing world of technology. From the analyzed data, it was cleared that organizations use a computerized system of processing information due to its effectiveness. The computerized system also makes work easier and faster.

The importance of adequate, correct and timely information to any business organization cannot be overemphasized. Considering all the data analyzed, it is therefore concluded that MIS will go a long way in bringing effectiveness, and growth to business organizations and thus aiding the country in achieving its rapid economic growth and development.

Based on the findings of this study and conclusion reached, the following recommendations are made; First Bank Nigeria should improve their investment in information technology in order for them to be able to reap the maximum benefit of MIS. The management should setup a reliable MIS so as to have information as at when needed for decision making effectiveness; The management of FBN should prioritize it's efforts, that is, they should direct more efforts towards accessing information and collection of data rather than the actual presentation of the information; Management Information System requires timely development to improve its accuracy and effectiveness. The management should adhere to the development needs of the system.

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