

MANAGEMENT INFORMATION SYSTEM AND DECISION MAKING IN CENTRAL BANK OF NIGERIA, ABUJA.

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ABSTRACT

The study examined the impact of Management Information system (MIS) on decision making in the Central Bank of Nigeria (CBN). The objectives of the study were to examine the effect of Data on decision making in CBN, Abuja. The study adopted the cross-sectional survey design, and sampled 58 respondents which is the entire population of management staff. The study plugged in on SPSS by adopting linear regression. The study used correlation in order to determine the relationship between the variables of the study. Hypothesis was tested using the regression analysis. The empirical results showed that respondents generally perceive analyzed data as crucial for decision-making within the CBN, Abuja. Therefore, it was determined that MIS has a significant impact on decision making in the CBN. The study recommended that implementing measures to ensure the quality and reliability of data used for decision-making is crucial. This includes regular data validation, verification, and cleansing processes to identify and rectify errors, inconsistencies, and inaccuracies in data sources.

Keywords: Management, Information, Financial Institutions, Nigeria, Decision Making, Central Bank of Nigeria

INTRODUCTION

As Nigeria's top financial institution, the Central Bank of Nigeria (CBN) has a significant influence on the nation's economic environment. Its duties include maintaining the country's foreign currency reserves, regulating and overseeing financial institutions, creating and carrying out monetary policies, and guaranteeing the general stability of the banking industry. The CBN must make timely, efficient, and data-driven choices that impact the functioning of the national economy in order to fulfil these responsibilities. The quality of the CBN's decision-making is crucial given the intricacy and breadth of these duties.

In this regard, the management information system (MIS) becomes an essential instrument that could make CBN decision-making easier. The systematic collection, analysis, storage, and distribution of data essential for administrative decision-making is the goal of a management information system (MIS), making data the central focus of the concept. This is made possible through the integration of many data sources, such as macroeconomic indicators and banking sector performance, thereby helping the CBN to provide thorough insights that guide its regulatory and monetary policy initiatives.

According to Olughor (2019), A part of a company's total internal control system, management information systems (MIS) address the ways in which management accountants use

people, documents, technology, and processes to address business problems. Also, Kumar (2020) posit that for MIS to be properly defined, it must be divided into three parts, which include; management, information and system. Although, the focal point for this study is on the effect of analyzed data, which Kumar (2020) described as information. The information necessary for good organisation management may be found in MIS, which is a system process. It is useful for lowering organizational and overhead cost (Al-Zhrani, 2021).

Therefore, the efficient functioning of central banks worldwide is dependent on data-driven decision-making in today's complicated financial climate. Accurate, up-to-date, and thorough data is of the utmost importance to the Abuja-based Central Bank of Nigeria (CBN), which is tasked with the crucial responsibilities of regulating the banking sector, promoting economic development, and preserving financial stability. The CBN's decision-making capacity has a direct bearing on the Nigerian economy, which in turn affects inflation, currency stability, and credit availability.

In the past, policy choices were made by central banks based on human data analysis and conventional economic indicators (Saaty, 2008). Nevertheless, data technology improvements have revolutionised the way financial institutions function by making massive quantities of data available and enhancing forecast accuracy and policy precision with advanced analytical tools (Dremel, 2017). To make better judgements on monetary policy, financial regulation, and foreign currency management, the CBN has been using data-driven methods more and more recently. The CBN will be better able to react to new economic trends and changes in the global financial landscape if it uses data analytics, statistical models, and access to data in real-time.

Consequently, this study explores the effect of analyzed data (a dimension of MIS) During the course of selecting a choice at the CBN, with a focus on understanding how data collected, analyzed and utilized influences policy and operational decisions. It examines the impact of data-driven decision-making on the bank's ability to manage Nigeria's macroeconomic

environment and assesses the challenges and opportunities that arise from relying on data within this institution. By evaluating these aspects, the study aims to highlight the significance of data in shaping the CBN's policies and its contribution to Nigeria's economic stability and growth.

In addition to directing monetary policy, regulating financial institutions, and supervising financial markets, the Central Bank of Nigeria (CBN) is essential to the nation's economic stability. The CBN must make wise decisions in order to preserve macroeconomic stability, manage foreign currency reserves, control inflation, and advance financial inclusion in Nigeria's dynamic and sometimes unstable economic environment. The CBN mainly uses Management Information Systems (MIS) to gather, process, and evaluate enormous volumes of data from many economic sectors in order to make fast, accurate, and well-informed decisions. Although there is a lot of room for increased efficacy and efficiency when MIS is included into the CBN's decision-making procedures, a number of obstacles prevent it from reaching its full potential. Nigeria's economy is complicated, with regular changes in oil prices, political unpredictability, currency rate volatility, and the financial sector's susceptibility. As such, policymaking requires the use of precise, fast, and thorough data. Nevertheless, issues with data quality, system integration, cybersecurity risks, and staff proficiency with MIS tools remain despite MIS developments.

Similarly, owing to the critical role MIS play within the organizational context, there have been several studies done in the past, denoting MIS's contribution in decision making (Al-Shawabkeh, 2022; Shah, 2022; Karim, 2021; Olugbor, 2019; Kushwah and Bhargav, 2019. But, neither of such studies adequately provided empirical fact on the extent of effect component of MIS have on decision making, especially as it relates to the Nigerian business environment. Rather, most of the related studies have relied on qualitative method of examining the relationship between MIS and decision-making process (Satyanarayana, 2019). Meanwhile, others like Berisha-Shaqiri (2022) who tried similar studies,

failed to examine the impact on decision making in the central bank of Nigeria.

These difficulties highlight the need for an examination of the extent Management Information Systems (MIS) affect CBN decision-making procedures. Gaining this understanding will help the CBN make better decisions by optimising its MIS, which will enhance the bank's capacity to oversee Nigeria's financial system, monetary policy, and general economic stability.

Aim and Objective of the Study

This study aim at examining the effect of management information system o decision making process at the Central Bank of Nigeria, specifically, the study objective is to ascertain the extent of effect analyzed data have on decision making process at the Central Bank of Nigeria.

Research Question

1. How does analyzed data influence decision making process at the Central Bank of Nigeria?

Statement of Hypothesis

H0₁ There is no significant relationship between analyzed data and decision making at the Central Bank of Nigeria.

REVIEW OF LITERATURE

Management Information System

According to Davis and Olson (2022), a Management Information System (MIS) is a collection of tools and processes that can collect data from several sources, organise it, and display it in an understandable way. Management information systems allow for the generation of reports that provide executives a bird's-eye perspective of all the data they want for decision-making, from the most minute aspects of the plan down to the most general ones. Despite being one of the first forms of contemporary computing, management information systems rely heavily on technology to gather and display data. Another reason management information systems (MIS) are so crucial is that they facilitate better and faster decision-making on the part of managers. Can the MIS provide managers all the data they need to make educated choices and conduct thorough analyses of operational problems by

integrating data from several sources into a single database and presenting it in a logical manner? (Laudon et al., 2009). Managers may get almost any sort of data they need from the management information system (MIS). At a glance, it may provide financial data like daily income and costs and assign them to certain groups or departments. Project completion times and product quality off the assembly line are two examples of performance metrics that may aid managers in pinpointing problem areas. From any location with an internet connection, employees can control their shift schedules and the incoming and departing shipments. Cooperation and communication are also made easier with the use of a management information system. Coworkers may revise and distribute papers, as well as disseminate important updates and alerts to the whole company. As stated by Pant and Hsu (2018). The capacity to generate reports is a very advantageous aspect of management information systems (MIS). When managers get internal reports, they are able to comprehend the material since the reports are well-organised and include all pertinent data. Information systems are crucial to organisations because they help with managing money, people, and other basic resources. These systems are characterised by valuable information resources that organisations can use to study and evaluate their current and past situations. This helps them make the right decisions at the right time, which is especially important when they are competing. Laudon is the same year (2020).

Analyzed Data (Information)

Information in an electronic format that can be saved and used by a computer is referred to as data, this view about data is expressed by the Cambridge Dictionary. This data often consists of facts or statistics that are gathered with the purpose of examination, consideration, and decision-making. Put simply, data consists of a collection of factors that might be either quantitative or qualitative. Regardless of the sector, data is now the engine that propels the development of many innovations. "Data" is derived from the Latin word "datum," meaning "something given" in a crude translation. Data is utilised in many

situations but is raw, unorganised, unanalysed, uninterrupted, and lacks context. One kind of data is the information that researchers collect in the form of facts and statistics. Without an overarching goal or set of instructions, data is essentially devoid of its informational fervour and becomes mostly worthless. We discover information, nevertheless, when we analyse, organise, and give that data some composure or context. The original meaning of the word "information" was "the act of informing," with its origins in Middle French and Old French. The word was most often used to refer to education, knowledge, and teaching. Information is essentially organised, screened, and helpful.

Decision Making

The mental (cognitive) process that leads to the practical selection from a set of alternatives is what we call decision-making. In the end, every decision-making process leads to a selection. No matter what the outcome is, it is a concept or an action (Greene, et al., 2009; Bonatti et al., 2009; Carlson, et al., 2009). According to Delazer et al. (2011), decision-makers rely on their cultural background, personal beliefs and values, information, perceptions, attitudes, and insights while making decisions. There seems to be no direct correlation between the information that influences our choices, preferences, and decisions and our continuous decision-making; rather, these influences operate via unconscious pathways (Abdollahi, 2005). A great deal of research across various fields has focused on human performance as it relates to decision-making.

Management Information System and Decision-Making Process

Data that is both accurate and up-to-date is provided to management via MIS systems. For better planning, control, and operational activities inside the organisation, as well as for decision-making in general, this data is essential. By enhancing processing speed and decreasing costs, MIS boosts the firm's competitiveness. The importance of information in a company's operations has changed due to the impact of technology. The importance of information has grown to the point that it is considered vital to

every contemporary business (Papows, 2018). There are several ways in which MIS and its associated organisational subsystems aid in making decisions. According to Power (2022), one of the most crucial aspects of working in a corporate setting is making choices. In an effort to maximise profits, businesses often make choices about new business prospects or operational enhancements. Maintaining a steady flow of information to management is the fundamental principle of management information systems (MIS). Decisions are thereafter made using data and information received from MIS (Asemi, et al 2021). The ability of MIS to autonomously detect system faults, formulate an action plan, and implement that plan makes it a valuable tool for decision making (Obi, 2023) in this domain. Adebayo (2017) emphasised the significance of management information systems (MIS) in decision making, saying that it helps with matters pertaining to the organization's material and people resources. According to Satyanarayana (2019). One way of looking about MIS is as a tool for data transformation, which provides useful information for decision-making.

METHODOLOGY

This study adopted a quantitative method, and the cross-sectional survey design was deemed appropriate for the study. Based on the study scope which focused more on management/decision makers at the Central Bank of Nigeria, the population of this study comprised of heads and assistant heads of the 29 departments of the CBN, Abuja. Therefore, a total of 58 management staff made up the population of the study. Concurrently, the study utilized census approach in determining the study sample size since the population of the study is of a manageable size. To this effect, a structured questionnaire, designed using 5 points Likert scale, was used to collect data from the respondents. Both content and face validity were used to validate the research instrument. Also, the Cronbach Alpha was used to measure the internal uniformity of the instrument and it was derived that the Cronbach Alpha value for analyzed data is 0.9746, while decision making was found to be 0.7564. Additionally, mean, standard deviation

and percentages were used as instruments to descriptively analyze the attributes of respondents as well as their response pattern, while linear regression analysis was utilized in establishing the effect of the MIS and decision making.

DATA ANALYSIS

Survey report

We sent out 58 surveys, and 55 of them were filled out correctly and sent back from the surveyed departments in Central bank of Nigeria, Abuja. Also, demographically, the age distribution of the respondents were 20% falls between 20 – 30, 38% falls with 31 – 40 years, 20% falls within 41 -50 years, while 51 – 60 years respondents were 16% of the respondents. On their gender distribution 56% were male, while female was 44%. Then, majority of the respondents have worked for a minimum of 5 years.

Table 1: Univariate Analysis on Analyzed Data

S/N	Statements	SA	A	U	D	SD	Mean	Std. Dev
		(%)	(%)	(%)	(%)	(%)		
1	Data plays a crucial role in decision making within the Central Bank of Nigeria, Abuja.	22.1 %	53.2 %	9.1%	14.5%	2.1%	3.7764	1.01721
2	The availability of accurate and timely data enhances the quality of decision making.	22.4 %	52.9 %	13.9%	10.3%	.6%	3.8610	.90052
3	Data-driven decision making is widely practiced and encouraged within my department/division.	13.3 %	59.8 %	16.9%	8.5%	1.5%	3.7492	.84600

4	The utilization of a Management Information System (MIS) improves the accessibility and reliability of data.	20.5 %	61.9 %	11.2%	5.1%	1.2%	3.9547	.79453
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From the above table, a significant majority of respondents (82.4% between SA and A) agree that the utilization of MIS enhances data accessibility and reliability. The mean perception score is 3.9547, indicating a strong level of agreement with this statement.

making within the Central Bank of Nigeria, Abuja, with a particularly strong agreement regarding the role of MIS in improving data accessibility and reliability. However, there are variations in perceptions regarding the extent of data-driven decision-making practices within departments/divisions.

Generally, the data suggests that respondents generally perceive data as crucial for decision-

Table 2: Univariate Analysis of the decision making in central bank of Nigeria

S/ N	Statements	SA	A	U	D	SD	Mean	Std. Dev
		(%)	(%)	(%)	(%)	(%)		
1	Decisions made in our organization generally lead to positive outcomes	15.1	56.2	18.7	8.5	1.5	3.7492	.86723
2	The implementation of decisions is effectively monitored and evaluated.	21.	60.1	12.1	5.1	1.2	3.9547	.80589
3	The organization learns from past decisions to improve future decision making.	23.0	51.1	9.7	12.5	3.8	3.7885	1.01384
4	Decision outcomes are communicated clearly to all relevant parties	24.5	50.2	14.2	10.6	.6	3.8731	.92223

Overall, the data suggests that respondents generally perceive the decision-making processes within the Central Bank of Nigeria, Abuja, positively. There is a strong agreement that decisions lead to positive outcomes and are effectively monitored, evaluated, and

communicated. Additionally, there is acknowledgment that the organization learns from past decisions to improve future decision-making. However, there are some variations in perceptions regarding the organization's ability to learn from past decisions.

Regression Analysis

TEST OF HYPOTHESES

Table 3 Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.737 ^a	.543	.536	.65242
a. Predictors: (Constant), Analyzed Data				

Source: SPSS output 2024

The regression findings can be shown in table 3, and the coefficient of determination (R²) is a percentage that shows that the independent variables explain 0.543 of the total variation in the dependent variable, decision making. So, while other factors do contribute to the

remaining 46% of variation in CBN decision making, 54% of that variation is attributable to changes in the examined data (as a MIS dimension). This demonstrates that the model and the research variable are well-aligned.

Table 4 Anova Result

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	164.544	2	32.909	77.313	.000 ^b
	Residual	138.338	53	.426		
	Total	302.882	55			
a. Dependent Variable: DECISION MAKING						
b. Predictors: (Constant), ANALYZED DATA						

Source: SPSS output 2024.

The model's goodness of fit is shown in the F-test table above. If the Sig value is less than 0.05 at the alpha level of 0.05 and the 95% confidence level, it indicates that the model is suitable for the

investigation. Nevertheless, the model is appropriate for the investigation since our Sig value is less than 0.05.

Table 5 Regression Result

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.081	.275		.295	.769
	ANALYZED DATA	.737	.136	.668	5.601	.000

Source: SPSS output 2024

The hypotheses which were earlier stated in null forms were tested using the result obtained from regression result as presented in Table 5

HYPOTHESIS

H₀₁: There is no significant impact of Data on decision making in Central Bank of Nigeria, Abuja.

The coefficient for data is 0.732, indicating that there is positive impact of analyzed data on decision making in the central bank of Nigeria. This means that one percent increase in data analyzed for decision makers will lead to an increase in the decision making in the organization by 73.7%. The t-value of data is 5.601 while its p-value is 0.000 which is significant at 5%. Based on this evidence, the null hypothesis one of the studies which states that there is no significant impact of Data on decision making in Central Bank of Nigeria, Abuja, would be rejected based on the sig value, which is below 0.05 level of significant.

CONCLUSION AND RECOMMENDATION

Based on the findings of this study, it was concluded that hardware, software and business procedures exert a positive and significant influence on decision making among the staff of the central bank of Nigeria, Abuja. On the other hand, it was concluded that data and people do not have any impact on decision making at the central bank of Nigeria, Abuja during the period of the study. The following suggestions were offered in light of the study's results and conclusions:

i. Implementing measures to ensure the quality and reliability of data used for decision-making is crucial. This includes

regular data validation, verification, and cleansing processes to identify and rectify errors, inconsistencies, and inaccuracies in data sources.

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