DATABASE MANAGEMENT SYSTEM AND DECISION-MAKING PROCESS OF COMMERCIAL BANKS IN RIVERS STATE

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ABSTRACT

This study investigated the relationship between Database Management System and decision making process of Commercial banks in Rivers State. Decision Making process was measured in terms of Strategic decision making, tactical decision making and Operational decision making. The study adopted the cross-sectional research survey design. Primary data was generated through structured questionnaire. The population of this study was twenty one (21) deposit money banks. Seven employees were selected from each of the twenty one (21) deposit money banks giving a total of one hundred and forty seven (147) employees. This study the researcher adopted a census sampling technique to study all the twenty one (21) deposit money banks because the population was small. The research instrument was validated by supervisors' vetting and approval while the reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70. The hypotheses were tested using the Spearman's Rank Order Correlation Statistics while the partial correlation was used to test the moderating effect of organisational structure. The tests were carried out at a 0.05 significance level. Findings revealed that there is a significant relationship between Database Management System and decision making process of Commercial Banks in Rivers State. Specifically, all the dimensions of Database Management System and all the measures of decision making process of Commercial Banks in Rivers State all revealed statistically significant correlation. Therefore, this study concludes that enhancing the Database Management System is essential to improving their decision making process. Hence the study recommends that the Deposit money banks should employ the use of data management system as a powerful tool in running the activities of the bank for organizational efficiency to be sustained. The pursuit of keeping abreast of the development of the systems and information technology used in the Commercial Banks.

Keywords: Database Management System, Decision Making Process, Strategic decision making, Tactical decision making, Operational decision making

INTRODUCTION

Banks are the primary source of financing, it is imperative to understand how bank managers make effective decisions to meet the bank's objectives of providing financial assistance to business companies and other organizations. Banks have vast amounts of customer data such as personal information and the transactions

that they process for their customers daily. Commercial banks can't work without management information systems as the number of participants in these companies more than million subscribers, so it's hard to save their data using the manual method (using files). Commercial banks are very crucial to economic growth of the nation for the services they provide such as financial mediation between savers and investors, credit creation and encouragement of capital accumulation. The health of the economy is closely related to the soundness of its banking system. Banking as an activity involves acceptance of deposits and lending or investment of money. It facilitates business activities by providing money and certain services that help in exchange of goods and services. The traditional role of banks has been that of intermediary, that is, the bringing together of borrowers and lenders (savers or depositors). This role can only be done successfully and for a sustained period with the careful management of credit and liquidity.

Database is a collection of inter-related data which are used to retrieve, insert and delete the data efficiently, Rocha, Vale, Cirilo, Barbosa, and Mourão, 2015. Data can be used to organise in the various format such as table, schema, views, and reports, etc. For example: The college Database organizes the data about the admin, staff, students and faculty etc. This can be can easily retrieve, insert, and delete the information using database. Database management system is software which is used to manage the database. Database Management System (DBMS) is a collection of program that enables a user to perform various operations like insert, modify, update, delete, maintain and access the database. DBMS relieves the user from knowing how the data is stored physically and complex algorithms used for performing operations on the database. Only focus on how the operations are to be performed to retrieve the data from the database. DBMS is also charge of access, security, storage and host of other functions for the database system. It does through a selection of computer programs (Susanto and Meiryani, 2019).

Database is a collection of related data. Database management system is software designed to assist the maintenance and utilization of large scale collection of data, Lo, Binnig, Kossmann, Özsu, and Hon, 2010.

Database Management System is made up of computer programs that help in the storage and retrieval of data. Of course, it also includes the actual physical databases where the information store after it capture. There are several database management systems that can use in MIS. The suitability of the systems will depend on the amount of data that will need to process and store in the system. Database Management System (DBMS) is a collection of program that enables user to create and maintain a database. Database management system is seen as processing of data, that is, the routine facts and figures of the organization, into information vital for decision-making.

Decision-making is an essential component of organizational life. Decision makers receive and analysis information using many different media, including traditional print, group and interpersonal information exchanges and computer-based tools Decision support systems (DSS) is a generic concept that describes information systems that provide analytical modelling and information to support semi-structured and unstructured organizational decision making. Decision - making is the process by which organizational members choose specific course of action in response to threats and opportunities (George and Jones, 2016: 428). Good decision result in courses of actions that help an individual, group or organization to be effective, the opposite is its reverse. Every organization grows, prospers or fails as a result of decisions made by It is members; and decision according to Daft (2021: 399) can be risky and uncertain without any success.

Kaurdi (2019) defined decision-making as the cognitive process resulting in the selection of a belief or a course of action among several alternative possibilities. Every decision-making process produces a final choice that may or may not prompt action. Deegan (2022) argued that decision-making is the study of identifying and choosing alternatives based on the values and preferences of the decision maker. Decision making is one of the central activities of management and is a huge part of any process of implementation. Pandey (2010) argued that decision-making is the study of identifying and choosing alternatives based on the values and preferences of the decision maker. 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. Management information system is also a collection of people, procedures and devices organized to convert data from internal and external sources into information and communicate such information in an appropriate form to management at all levels Kenneth and Jane Laudon (2013) Dos Santos (2021).

It is interesting to note that in the Nigeria Commercial banks no empirical study has been conducted to show the relationship between Management Information System and Decision making process of Commercial banks (Andale, 2006). In order to close this research gap in the literature, this study sought to identify and empirically analyze the factors that influence Decision making process of banking sector. This study aimed to examine the relationship of Database management system and decision making process of Commercial banks in Rivers State.

The objectives of this study therefore are as follows:

i. To examine the relationship between Database Management System and Strategic decision making of Commercial Banks in Rivers State.

ii. To examine the relationship between Database Management System and Tactical decision making of Commercial Banks in Rivers State.

iii. To examine the relationship between Database Management System and Operational decision making of Commercial Banks in Rivers State.

Conceptual Framework

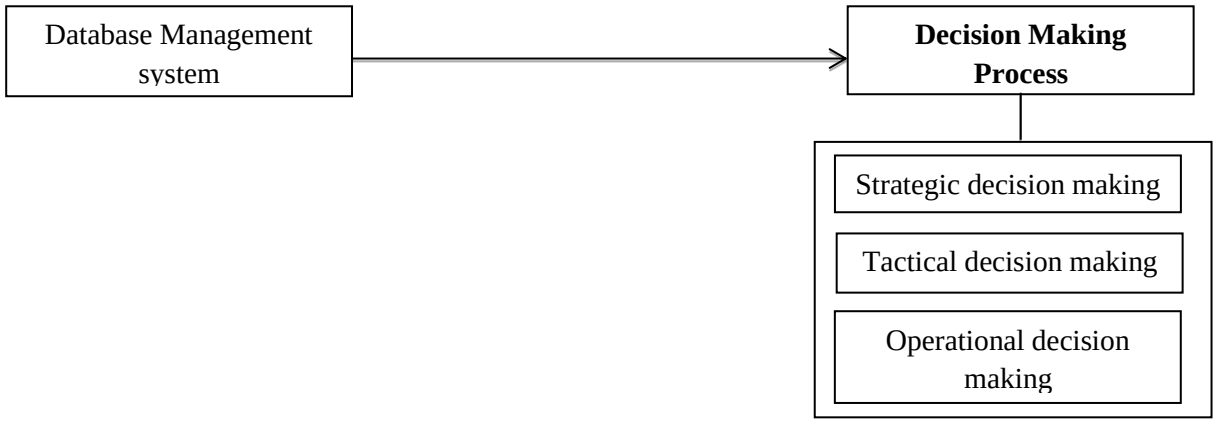

Figure 1: Database management system and decision making process

Source: Desk Research

The following research questions were answered in the course of this study:

i. To what extent does Database Management System influence Strategic decision making of Commercial Banks in Rivers State?

ii. To what extent does Database Management System influence Tactical decision making of Commercial Banks in Rivers State?

iii. To what extent does Database Management System influence Operational decision making of Commercial Banks in Rivers State?

LITERATURE REVIEW

Theoretical Foundation

Grounded Theory

This study hinges on Grounded Theory which is a way of analyzing data, by firstly coding the information. The codes are some sought of labels that make qualitative data easy to separate, compile and organize (Hussey and Hussey, 1997). Some of the codes include axial, open and selective coding. The grounded theory, according to Hussey (1997), requires the discovery and creation of codes from interpretation of data. Selective coding is a process of selecting the core category and systematically, relating it to other categories and validating their relationships. The Management Information System (MIS) also relies heavily on systems theory. The systems theory offers solutions to handle complex situations of the input

and output flows. It uses theory of communication which helps to evolve a system design capable of handling data inputs, process, the outputs with the least possible noise or distortion in transmitting the information from a source to destination.

Database Management System

Data is seen as a corporate asset that can be used to make more informed business decisions, improve marketing campaigns, optimize business operations and reduce costs, all with the goal of increasing revenue and profits (Jack 2019). But a lack of proper data management systems can saddle organizations with incompatible data that can affect the organization efficiency. An efficient and effective data management system helps in minimizing potential errors and reducing the damages caused by bad data. Therefore, an effective data management strategy must be implemented to better control the most valuable asset of the business. Managing data as a resource is an important managerial task in any organization today. It is evident that business success depends not only on the possession of resources, but on the efficient utilization of resources, data and information within an organization and its environment form part of the strategic, tactical and operational resources of an enterprise (Lessing & Scheepers 2021).

Data management system is the process of storing, organizing and maintaining the data created and collected by an organization. According to Janakiraman and Sarukesi (2017), data management systems keep data that are needed for decision making process, managed by computer software called database management system (DBMS). It allows users to insert or delete, modify, and query the data. Data management systems perform the function of storing, organizing, and maintaining the data that are needed for decision making process. The data management system includes a database and data warehouse. The database is an organized collection of, generally stored and accessed electronically from a computer system which contains relevant data for the situation and is managed by software called the database management system (DBMS). Database is the collection of records kept for a common purpose and a database management system (DBMS) "is a program product for keeping computerized records about an enterprise.

A database is a repository for stored data. The database management subsystem can be interconnected with the corporate data warehouse, a repository for corporate relevant decision-making data. This ensures data integrity and consistency at any time when the datasets are accessed and allows controlled data access according to the access rights defined in the systems manager. Access to data in the database is usually provided by a "database management system" (DBMS) consisting of an integrated set of computer software that allows to interact with one or more databases and provides access to all of the data contained in the database. The DBMS provides various functions that allow entry, storage and retrieval of large quantities of information and provides ways to manage how that information is organized. An organization must have accurate and reliable data for effective decision making. Generally, a database is an organized collection of related information (Rob & Coronel, 2020). The organized information or database serves as a base from which desired information can be retrieved or decision made by further recognizing or processing the data.

Data management system results in reduction of time to find necessary information which increases employee efficiency. Banks are considered to be the backbone of the financial system; they play an important role in the economic development as they play the role of intermediary to transfer funds from surplus units to deficit units. So, the efficiency of a bank is essential and needs to be paid more attention. However, due to the immensity in the information reservoirs across the Commercial banks facilitated by increased customer base, banks have seriously embraced the data management systems with high levels of programming being experienced across all the departments of their operations. Many organizations have over the years experienced customer loss to their competitors as a result of many factors, such as speed of service delivery, and quality of service provided. This has called for the use of technology to aid in spearheading improved performance within the banking sector.

Concept of Decision Making Process

Decision comes from the word decide, which means that to choose on in preference to other variable alternatives. Decision-making involves a choice of actions or strategies, the outcome of which may be

known for certainty or completely unknown. Decision making had been defined by different scholars. According to Weihrich and Koontz (2001), Decision-making is the selection of a course of action from among alternatives; it is the core of planning. Decision making involve a choice of strategies of the outcomes of which may be known for certainty or completely unknown, Decision making is referred as the process of choosing a course of action from among alternatives to achieve a desired goal. It consists of activities a manager performs to come to a conclusion. According to Garrison, (2010), decision making is often a difficult task that is complicated by the existence of numerous alternatives and massive amount of data, only some of which may be relevant. Every decision involves choosing from among at least two alternatives. The cost and benefit of each alternative should be compared. An essential function of management is to take decision and decisions have to be taken whenever there are alternative courses of action. Cole (1993) defined Decision-making as an accepted part of everyday human life. According to Gupta (2001): Decision-making is the process of choosing a course of action from among alternatives to achieve desired goals. Decision-making is the process of selection and aim is to select the best alternatives.

Decision-making is the study of identifying and choosing alternatives based one the values and preferences of the decision maker. Making decision implies that there are alternatives to be considered and in such a case, we want not only to identify as many of these alternatives as possible but also to choose the one that best fits with our goals, objective, desires, values and so on (Ehereberg & Smith, 2016). Addai (2013), also mentioned that decision making is the "process of sufficiently reducing uncertainty and doubt about alternatives to allow a reasonable choice to be made from among them." According to him, decision-making emphasizes the information gathering for management function. It is where uncertainty is reduced rather than eliminated. In addition, very few decisions are made with "absolute certainty because complete knowledge about all the alternatives in seldom possible. Thus, every decision involves a certain amount of risk". According to (Stewart, French &Rios, 2013), decision-making should start with the identification of

the decision maker(s) and stakeholder(s) in decision, reducing the possible disagreement about problem definition, requirements, goals and criteria.

Decision making process by organization is meant to arrive at the best suitable alternative and choice which is desirable to move the organization to attain its goals and objectives. A decision-making process is a series of steps taken by an individual to determine the best option or course of action to meet their needs. In a business context, it is a set of steps taken by managers in an enterprise to determine the planned path for business initiatives and to set specific actions in motion. Ideally, business decisions are based on an analysis of objective facts, aided by the use of business intelligence (BI) and analytics tools. In any business situation there are multiple directions in which to take a strategy or an initiative. The variety of alternatives to weigh -- and the volume of decisions that must be made on an ongoing basis, especially in large organizations -- makes the implementation of an effective decision-making process a crucial element of managing successful business operations.

Measures of Decision Making Process

Strategic Decision Making

Decision-making is a process that occurs daily in homes, schools, political, and governmental organizations, corporate boardrooms and executive offices. Decisions, especially important decisions, are made by leaders and managers located at the top of the organizational hierarchy (Hickson et al., 2006). By definition, decision-making is the process through which managers identify organizational problems and attempt to resolve them (Bartol and Martin, 2004). In the words of Harris (2009) decision making involves an act of identifying and ably selecting among an array of alternatives based on the inclination. Its includes variety of processes that are all intermediate steps between thought and action which are the precursors to behavior (Talley, 2021).

Strategic decision-making is an attempt to plan for the long-term future of an organization and increase the odds that the organization will be successful Strategic decision-making is a specific type of decision-making that is "important in terms of the actions taken, resources committed, or the precedent set (Eisenhardt and Zbaracki, 2022) in addition to Strategic decisions are a specific type of decision, as opposed to tactical decisions and operational decisions (Bess and Dee, 2018). (Mintzberg et al., 1976) explain the essence of strategic decisions: A strategic decision process is characterized by novelty, complexity, and open-endedness, by the fact that the organization usually begins with little understanding of the decision situation it faces or the route to its solution, and only a vague idea of what that solution might be and how it will be evaluated when it is developed. Only by groping through a recursive, discontinuous process involving many difficult steps and a host of dynamic factors over a considerable period of time is a final choice made."

Strategic decision-making is planning the future of the organization by defining long-term goals, responding to market forces and identifying organizational problems and attempt to resolve them (Ketchen & Snow, 2013). On the same vain they suggest that the significance of decision making is to chart ways to improve performance of organization for purpose of progress and sustainability. Strategic decisions decide the total direction of an enterprise and its subsequent capability in light of the anticipated, the spontaneous, and the inconceivable changes that may arise in its external and internal business environment which will shape the strategies, goals and vision of the organization (Mintzberg & Quian, 2021). Strategic decision makings and managers cannot be separated they go inline together and on that note managers in any organization are tasked with the responsibility of making strategic decisions which are crucial to the attainment of the organization goals and objectives.

Tactical Decision-Making

Tactical decisions are decisions and plans that concern the more detailed implementation of the directors' general strategy, usually with a medium-term impact on a company. Tactical points requiring decisions include, but are not limited to: Size and structure of a work force. Tactical decision making allows a

company to evaluate its infrastructure and how it operates and make adjustments accordingly. To make a tactical decision, a board analyzes information it is presented, and determines an immediate course of action with the intention of achieving a specific goal that will directly and immediately benefit the most people. Dezso et al., (2022) suggests that although tactical decisions do involve many people and departments, tactical decisions tend to have a limited impact in the case of their failure because they can be adjusted and changed relatively quickly. Tactical decisions are medium term decisions. Whereas a misguided strategy could take a business in entirely the wrong direction and lead to failure, a misguided tactic would have a more limited impact. Strategies are usually in place for a long period of time; tactics tend to be more changeable. If a tactic fails to achieve outcomes it can be adjusted or changed. Tactical decisions include choosing which employees to consult with the managers of each area, the people carrying out the job; what channels of communication to use in group discussions, one-to-one meetings and how much time to spend on each aspect (Milkaman et al., 2018). Tactical Decision Making means of choosing among alternatives with an immediate or limited end in view (Hansen and Mowen, 2011:820). Tactical decisions are short term in nature. They are short-term actions which serve a larger purpose in the long run.

Operational Decisions

Operational decisions relate to day-to-day operations of the enterprise. They have a short-term horizon as they are taken repetitively. These decisions are based on facts regarding the events and do not require much of business judgement. Operational decisions are taken at lower levels of management. The information is needed for helping the manager to take rational, well informed decisions, information systems need to focus on the process of managerial decision making (Ajayi, Omirin and Fadekemi, 2017).

Database Management System and Decision-Making Process

The significance of management information systems (MIS) in decision-making was highlighted by Adebayo (2007), who said that they provide information that is needed for better decision-making on issues affecting the organization's people and material resources. According to Reason (1990), every decision-

making process produces a final choice that may or may not prompt action. Decisions vary depending on the structure, which provided for making those decisions. Modern information technologies offer new solutions for businesses, companies or other scientific institutions, which create new work surroundings which is based on computer communication between people. This differs express surroundings working people, so that enables greater flexibility, easier solutions to business problems, greater creativity, better interpersonal cooperation etc. Well presented solutions that have an impact on people's destiny, not only in performing physical but also intellectual works.

Doya, Kenji; Michael and Shadlen (2012) says Most decisions are followed by some form of cost-benefit analysis, people try to maximize benefits while minimizing costs by Schacter, Gilbert, Wegner (2011). According to Mustafa Muhamet (2015) management information system provides a support for making decisions based on methods and systematic analysis. Relying on this are created with the software who tested alternatives preparatory stage of the decision making process. These systems are known as decision support systems (DSS). A decision support system (DSS) is a computer program application that analyzes business data and presents it so that users can make business decisions more easily.

Management Information System provides information in form of reports and displays to managers and many business professionals. For example, sales managers may use their networked computer and web browser to get instantaneous display about the sales results of their daily sales analysis report to evaluate sales made by each sales personnel. Management Information System also takes into account integrative nature of information flow as well as the structuring of the organization around decision centers. Standards of performance are part of any good plans; hence, determination of standards like other aspects of the planning process depends on the availability of relevant management information system. Management information system aids the functioning and monitoring of an organization (Munirat et al, 2014). As Walrad and Moss (2013) state that efficiency and effectiveness do not means the same thing. Often one can have one, or the other, but not both (Unless one is lucky or one want to spend a lot of money). Being efficient

means that one spends less time on something, one spends less money on something or one spends less efforts (or number of workers) on something. Being effective means that one does his job well. In other words, the output (finished product) is of high quality. It is a rare and delightful occasion where a solution to a problem is both efficient and effective; one usually has to decide which he prefers, because one usually cannot have both.

In an IT context when we measure the effectiveness, we basically measuring the capacity of the outputs of information systems or an IT application to fulfill the requirements of the company, and to achieve its goals. Various studies have been undertaken to measure the impact of IT on management performance (efficiency and effectiveness) of business organizations using different performance indicators, which are considered key factors. These variables capture all activity levels, performance measures and common to all units, and cover the range of resources used. These variables include income, customer satisfaction, supplier/customer links, company image, job interest of employees, stakeholders' confidence, and interoffice links. Many researchers have investigated the impact of IT on incomes/profits of the companies, and found positive impact. They have concluded that IT has ultimately increased company image, job interest of employees, stakeholders' confidence, interoffice link etc. (Shaukat et al., 2018).

The MIS system must supply managers with accurate, quick and complete information. Good decision making requires quality data and timely information; an MIS is specifically designed to provide information on a timely basis. An MIS also provides different types of information based on users' need to improve effectiveness and efficiency (Shim, 2000). Effective use of information systems in management decision making gives power to managers and help organization succeed (Namani, 2020). Caniëls & Bakens, (2022) confirmed that there are strong relationship among information systems and decision making. In addition, Abdel and Mahmoud (2009) confirmed that there is strong relation between management information systems and decision making process.

The relationship between Database Management Systemand Decision Making Process is to be empirically assessed based on the tests for the following hypothetical statements:

HO1: There is no significant relationship between Database Management System and Strategic decision making of Commercial Banks in Rivers State.

HO2: There is no significant relationship between Database Management System and Tactical decision making of Commercial Banks in Rivers State.

HO3: There is no significant relationship between Database Management System and Operational decision making of Commercial Banks in Rivers State.

METHODOLOGY

The research design adopted for the study is cross-sectional survey design. The population of this study comprised of the twenty one (21) deposit money banks operating in Port Harcourt. The study elements consisted of one hundred and forty seven (147) managers. Data was collected through structured questionnaire. The research instrument was subjected to professional opinions. To ensure the reliability of the survey instrument in this study the Cronbach alpha reliability test was carried out on the generated data. The Spearman's Rank Order Correlation Coefficient was used as statistical instrument.

DATA ANALYSIS AND RESULT

A total of 147 copies were distributed based on the adopted sample size, only 101 copies representing 80% of the distributed copies were successfully retrieved within the specified timeframe apportioned for questionnaire completion.

Ho_1: There is no significant relationship between Database Management System and Strategic decision making of Commercial Banks in Rivers State.

Ho_2: There is no significant relationship between Database Management System and Tactical decision making of Commercial Banks in Rivers State.

Ho_3: There is no significant relationship between Database Management System and Operational decision making of Commercial Banks in Rivers State

Table 1: correlations for Database Management System and Decision Making Process measures

			Database Management System	Strategic decision Making	Tactical decision making	Operational decision Making
Spearman's rho	Database Management System	Correlation Coefficient	1.000	.534**	.815**	.667**
		Sig. (2-tailed)	.	.000	.000	.000
		N	113	113	113	113
	Strategic decision Making	Correlation Coefficient	.534**	1.000	.934**	.910**
		Sig. (2-tailed)	.000	.	.000	.000
		N	113	113	113	113
	Tactical decision making	Correlation Coefficient	.815**	.934**	1.000	.869**
		Sig. (2-tailed)	.000	.000	.	.000
		N	113	113	113	113
	Operational decision Making	Correlation Coefficient	.667**	.910**	.869**	1.000
		Sig. (2-tailed)	.000	.000	.000	.
		N	113	113	113	113

**. Correlation is significant at the 0.01 level (2-tailed).
Source: SPSS Output version 23.0

i. Where the effect of Database Management System on Strategic decision making = 0. 534 at a P < 0.05. The null hypothesis is rejected based on the evidence of significance.

ii. Where the effect of Database Management System on Tactical decision making = 0. 815 at a P < 0.05. The null hypothesis is rejected based on the based on the evidence of significance

iii. Where the effect of Database Management System on Operational decision making = 0. 667 at a P < 0.05. The null hypothesis is rejected based on the evidence of significance.

The results indicate that Database Management System significantly impacts and contributes towards Decision Making Process within the Commercial Banks in Rivers State. The evidence suggests that Database Management System has a high impact on both Strategic decision making and Tactical decision making but contributes moderately towards Operational decision making. This describes the dimension as not only driving actions that can be described as unselfish and supportive within the organization, it also enhances a sense of comradeship within the organization. In this vein, it is evident that Database

Management System is essential and improves the evidence of Decision-making Process within the organization.

DISCUSSION OF FINDINGS

The relationship between Database Management System and the measures of Decision-making Process is observed to be significant. Where the test shows high effects of Database Management System on measures such as Strategic decision making (rho =.534), and Tactical decision making (rho =. 815), and a moderate effect of Database Management System on Operational decision making (rho = .667). The evidence indicates that there is a significant level of influence by Database Management System on the achievement of Decision-Making Process in the Commercial Banks in Rivers State.

This finding supports the earlier finding in a study by Karemu, *et al* (2014), on critical analysis of Database Management System on medical employees' retention in public hospitals in Kenya, which indicated that Database Management System strategies impact positively on the retention of doctors and nurses at Kenyatta National hospital in Kenya. The studied variables were career development, compensation and benefits attractiveness, nature of work climate and levels of training and development. The data obtained from the study indicated that Database Management System strategies impact positively on the retention of doctors and nurses at Kenyatta national hospital in Kenya.

CONCLUSION AND RECOMMENDATIONS

The findings of this study affirm that Database Management System predicts Decision Making Process in Commercial Banks in Rivers State. The null hypothesis was rejected; therefore, the conclusion was Database Management System significantly influence Decision Making Process of the Commercial Banks in Rivers State. In line with the findings of this study, the following recommendations are made:

1. Deposit money banks should employ the use of data management system as a powerful tool in running the activities of the bank for organizational efficiency to be sustained.
2. The pursuit of keeping abreast of the development of the systems and information technology used in the banking sector.
3. Maintain the level of security and control enjoyed by the current system and work on the development of safety procedures according to the evolution of the information system.

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