

The role of management information systems in investment and financing decisions, an applied study on banks

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Abstract: The study aimed to demonstrate the impact of management information systems on investment and financing decisions in banks, and the study relied on the descriptive analytical method to extract its results. The study sample consisted of 30 male and female employees working in banks, regardless of age, gender, academic achievement or number of years of experience. That there is an impact of management information systems on investment decisions and financing in banks. The study recommended the need to use modern technology to track the status of customers in order to serve the administration by taking appropriate and timely decisions.

Key words: Management Information Systems, Investment Decisions, Finance, Banks.

Introduction

The rapid development of information technology and its wide spread inside and outside the environment of organizations, the emergence of what is known as the information revolution, the intensification of competition and the multiplicity of challenges faced by organizations have led to their acceleration in building and developing management information systems, which have become an important pillar for managing organizations and a source to give them a competitive advantage, not only within the scope of achievement various administrative functions, but also contribute to decision-making (Albuquerque, Quirós, & Justino, 2017).

Banks, like most organizations, aim for profit, competitive advantage and sustainability. Banks achieve their profits through several services they provide, the most prominent of which is lending, in addition to investment decisions. Therefore, the top managements of banks define a framework that provides this service within its limits, and this framework is the lending and credit policy (Almazán, Tovar, & Quintero, 2017).

The decisions taken by the banks to draw the parameters of the lending policy are crucial decisions that are often taken in circumstances characterized by risks and the difficulty of the future vision characteristic of the work of the banks. Therefore, building and developing a management information system in banks is imperative, in order to provide the appropriate information of the required quality at the right time and at the lowest possible cost, so that the decisions taken by the banks are sound (Akel, 2020).

Problem of Study

The study of information systems is of particular importance in light of the information and communication revolution, as information has become an important element and a vital resource on which organizations rely in advancing and progressing in light of competition and the rapid environmental conditions and changes (Arezo, 2018).

In light of the information revolution, which has become a distinctive feature of the current era, the tremendous development in information, communication and computer technology has contributed to ways of providing information with certain specifications that meet the needs of management in different organizations to perform their tasks and functions, and information has become its system, philosophies and specialized theories, which prompted to The growing realization of the importance of information systems in providing the information needed by the administration, which is characterized by speed, accuracy, cost and appropriate time, for the purpose of rationalizing the various administrative tasks and making rational decisions in the face of the problems facing the administration (Al-Wahidi, 2018).

The ability of any information system that has the ability to provide information is a key factor in adapting the variables, and an important thing to meet the requirements of decision-making, given that the administrative decision-making process, which depends on modern and accurate information directed to the study of problems, is very important and has a significant impact on increasing the effectiveness of organizations ensuring its survival and continuity (Bouchoucha and Boucha, 2018).

The main problem of the study is embodied in how to design information systems that depend on a database that contributes to enhancing the confidence of senior management in banks, and using them in the decision-making process. Positive and negative information taken by users towards information, and therefore these trends fundamentally affect the use and effectiveness of information systems, which is reflected on the efficiency of the decision-making process in banks.

From the foregoing, the research problem lies in the following:

What is the relationship of management information systems to making investment decisions and financing in banks?

Through the above problem, some sub-questions can be raised:

- Is there a relationship between the physical components and the decision to invest and finance in banks?
- Is there a relationship between the efficiency of the software used in the information system and the decision to finance in banks?
- Is there a relationship between the efficiency of communications and networks and the decision to finance in banks?

Hypotheses of Study

The general hypothesis is:

- There is a statistically significant relationship between administrative information systems, investment decision-making, and loan granting in banks.

The partial hypotheses are as follows:

- There is a statistically significant relationship between the physical components, investment decision-making and financing for banks.
- There is a statistically significant relationship between the efficiency of the software used in the information system and the banks' financing decision.

- There is a statistically significant relationship between the efficiency of communications and networks and the decision to grant financing to banks.

Motives if Study

The motives for choosing the topic can be highlighted through objective and subjective motives, where the objective reasons are:

The importance of the topic, its modernity and its connection to developments in the banking system.

The lack of studies dealing with the management information system in service institutions, especially banks.

While the subjective causes are:

Personal preference for the issue of management information system, and the desire to delve deeper into its various aspects.

The desire to learn about the nature of the management information system and its role in determining the credit and lending policy in banks.

Importance of Study

The importance of the study lies in:

The important role that banks play and their lending function in growth and achieving economic stability, and any defect in granting loans or investment decisions will affect this stability, in addition to the importance of advanced information and programs in the current era to meet the increasing challenges, improve banking services and make sound decisions.

Objectives of the study

This study seeks to achieve several goals, the most important of which are:

Clarify the theoretical foundations related to the management information system in banks.

- Identify the types of management information systems that exist at the level of banks.
- Identifying the nature of the lending and credit policy adopted in banks.
- To highlight the contribution of the management information system in determining the lending and credit policy of banks.

Theoretical foundations of the management information system in banks

The current era is the age of information, which has increased in size and different types, and its importance has emerged in all organizations and all sectors, and this is why the latter's interest in it has increased, as a result of the acceleration of its transmission and accumulation waves at a tremendous speed and the inability of traditional methods to address it, especially that information that is used in banks, and this explains the interest of the latter. Building and designing management information systems, which help to solve administrative problems, which have become more complex in light of this huge amount of information (El-Waer and Telilani, 2017).

Management information systems in banks seek to help make decisions and achieve integration and consistency between the various functions of banks, and this is what makes them one of the strategic resources in them, as it helps them achieve a competitive advantage, maintain their market share and continuity and protect them from the risk of bankruptcy, and this can only be achieved if distinguished efficient management information system in banks (Fuster et al., 2019).

The complexity of the activities carried out by organizations, their openness to the external environment and their benefit from information technology led to the emergence and development of information systems and their increasing importance and the organization's dependence on them to increase its competitiveness and maintain its continuity (Hashem, 2018).

Several definitions of management information system have been given. Among these definitions are the following:

A computer-based system that provides information to managers responsible for an official organizational unit, whether the organization as a whole or one of its job fields, and who have similar information needs. This information describes what happened in the past, present and future (El-Waer, and Telilani, 2017). That sub-system within the overall system of the organization, which is concerned with identifying, compiling, operating, analyzing and sending information to decision-making centers so that it conforms to the needs of managers in terms of form, comprehensiveness, quality and timeliness (Bouchoucha and Boucha, 2018).

From the foregoing, it is concluded that the management information system is a computer-based system from the sub-systems in the organization that works to provide the information necessary to support and continue the regular and daily operations and send it to the decision-making centers to manage the administrative decision-making process.

Management information system characteristics

The management information system has characteristics and features that distinguish it, and the most important of these characteristics can be highlighted in the following: (AL-hasfimy, 2018)

- MIS supports structural and semi-structural decisions and the level of administrative and operational control, and is also useful for planning purposes at the level of senior management.
- MIS is useful in making decisions based on current and past data.
- Management information systems are oriented to the service of control and reporting, and they are dedicated to providing reports on current operations and thus help in the daily control of activities.
- Management information systems depend on the existing information and the flow of information entering the organization more than the outgoing information.
- MIS has limited analytical capacity.
- Management information systems are relatively inflexible.
- MIS is based on known and stable information needs.
- Management information systems require a relatively long process of generalization and analysis

The role of the management information system in decision-making

One of the most important roles that the management information system plays in the organization is to assist decision makers in making various decisions, which they are forced to take as a result of developments and changes in the internal and external environment of the organization (AL-hasfimy, 2018).

Management information systems contribute to modernizing the decision-making process and relying on various mathematical techniques such as queues, linear programming, PERT network, decision tree, and others. These methods play a major role in decision-making through: (Ren & Dewan (2015).

- Rationalizing the decision-making process and dealing with each case according to its data, relying on analysis and conclusion rather than intuition.
- Facilitate the decision-making process.

Management information system in banks

Banks, like other organizations, need a management information system, which organizes the operations of each of the bank's activities and works on coordination among them. Banks' need for management information systems has increased in light of technological developments and intense competition (Akel, 2020).

The management information system in banks is characterized by a set of characteristics that can be highlighted through the following points: (Akel, 2020)

- Credibility and accuracy in providing information.
- Spread capacity.

- Diversity of reports.
- Periodicity and regularity of reports.
- Maintain a minimum level of confidentiality.

The importance of management information system in banks

The management information system in banks is of great importance, which can be highlighted in the following: (Almazán et al., 2017)

- Keeping pace with technological developments and applying them in banks, especially after the widespread use of the Internet, electronic money and the provision of automated services through ATMs.
- Contribute to the speed and facilitation of banking activities.
- Improving the services that banks provide to customers.
- Helping the bank to survive and maintain its customers.
- Contribute to the conduct of transactions and the development of the processing of banking operations, assisting in the decision-making process.
- Giving a competitive advantage to banks by developing the services and products they provide.

Credit information system

The lending information system is the most important type of management information system in banks due to its role in achieving integration and interdependence between the various functions of the bank on the one hand, and its role in making decisions and preserving the bank's resources on the other hand (Arezo, 2018).

The lending information system is one of the most important types of management information systems in banks. It is the system that seeks to collect and analyze lending data, extract indicators from it, and provide it to the bank's decision-makers in order to detect the degree of accuracy, efficiency and quality in the decisions taken and closely follow up the lending performance to ensure that it is in line with it. What is planned, and that the loan is granted in accordance with the established rules and the early detection of non-performing loans and their treatment quickly and effectively (Almazán et al., 2017).

Study Methodology

In order to achieve the objectives of the study, the descriptive analytical approach was used, which is known as a method of research that deals with existing events, phenomena and practices that are available for study and measurement as they are without interfering in their course and with them.

Study population and sample:

- . The research community: The research community consists of individuals working in banks.
- . Research sample: A random sample of 30 individuals was used, and questionnaires were distributed to them via the Internet.

The validity and reliability of the study tool - the questionnaire.

Where we use Cronbach's alpha scale to measure the stability of the measuring instrument in terms of positional expressions, and it is considered acceptable if it is 60 percent or more. The results of Cronbach's alpha are as follows:

Table No. (1) represents the results of Cronbach's alpha test

	Number of Phrases	Cronbach's coefficient	alpha
All phrases	17	0.841	

We note from Table No. (1) that the result of Cronbach's alpha coefficient is greater than 60 percent, reaching 0.841, and this indicates the stability of the study tool.

By calculating the validity of the test, we take the root of Cronbach's alpha coefficient of $0.844 = 0.918$, and this expresses the validity of the tool.

Table No. (2) represents the distribution of the sample members

Variables	Level	Repetition	Repetition
Age	Less than 30	10	34
	30-40	7	23
	41-50	5	17
	51 years and above	8	26
	Total	30	100
Gender	Male	22	74
	Female	8	26
	Total	30	100
Educational level	BA	18	61
	High Diploma	6	20
	Master	4	13
	PhD	2	6
	Total	30	100
Years of experience	Less than 5 years	22	74
	6-10	3	10
	11-15	3	10
	16 years and above	2	6
	Total	30	100

-We note from the table that 74 percent of the study sample are males and 26 percent of the study sample are females in proportions, and this indicates that the majority are males.

-We note from the table that the respondents are from young people, where the proportion of the first and second groups reached 46 percent.

-We note from the table that the majority of the samples are holders of a bachelor's degree, as the percentage of holders of a bachelor's degree was estimated at 61 percent.

-We notice from the table that the majority of the sample members have little experience, that is, less than 10 years, and this is because the majority of the sample members are young people under the age of thirty.

Table No. (3) Represents the standard deviations and arithmetic averages of the characteristics of the physical components

NO.	Paragraphs	Average	Standard deviation
1	The bank mainly relies on the computer to obtain information	3.8	0.786

2	The computers and equipment used in the bank are commensurate with the nature of its work	4.1	0.410
3	The computers and equipment used in the organization are currently considered among the best and latest technologies.	3.8	0.930
4	Computers and equipment provide the necessary capacity to assist employees in performing their duties.	3.9	0.756
Total		3.9	0.720

We conclude from Table No. (3) That most of the answers of the members of the study sample were positive for most of the paragraphs of the material components, and this is according to the results of the weighted average (3.8-4.1) consent of individuals.

The weighted arithmetic mean was the total (3.9), but the total standard deviation was low, as it reached (0.720).

Table No. (4) Represents the efficiency of the software used in the information system

NO.	Paragraphs	Average	Standard deviation
5	The computer programs used are characterized by the easy exchange of information between employees.	4.17	0.625
6	The computer programs used can process data and extract information	4.20	0.756
7	The computer programs used in the bank are among the latest technologies	3.9	0.845
Total		4.09	0.742

We conclude from Table No. (4) that most of the answers of the study sample members were positive with regard to most of the paragraphs related to the efficiency of the software used in the information system.

The total weighted arithmetic mean reached (4.09). As for the total standard deviation, its value was medium as it reached (0.742).

Table No. (5) Shows the efficiency of communications and networks

NO.	Paragraphs	Average	Standard deviation
8	The bank uses a communication network that connects all departments	4.12	0.563
9	The bank uses a communication network to transfer information between the bank and all its branches	4.01	0.846
10	There is a security system that prevents unauthorized people from entering to use the programs	3.60	0.741
11	There is a special section in the bank that takes care of information	3.15	0.751
Total		3.72	0.725

We note from Table (4) that the total arithmetic mean reached (3.72), while the total standard deviation percentage was low, as it reached (0.725).

Table No. (6) Shows the extent to which management information is used in credit and lending decisions.

NO.	Paragraphs	Average	Standard deviation
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12	The available information is used to make decisions about whether to grant loans or not	4.12	0.563
13	When making credit decisions, it depends largely on available reports and information	4.01	0.846
14	When making decisions related to granting loans, it depends largely on the available reports and information	3.60	0.741
15	There is a special section in the bank that takes care of information	3.15	0.751
16	There is confidence in decisions made based on the information available about the loan applicant or investment decisions		
17	Decisions taken based on the available information are considered correct, which would reduce bad loans.		
Total		3.72	0.725

Hypotheses test

In order to prove the existence of this effect, we calculated the Pearson correlation coefficients between the study variables, and the results were as follows:

Table No. (7) The effect of independent variables on the dependent variable

NO. Independent Variables		The dependent variable is the management information used in investment and financing decisions.	
		Pearson correlation coefficient	Indication level
1	Hardware/equipment used in information systems	0.06	0.787
2	The efficiency of the software used in the information system	0.219	0.354
3	Efficiency of communications and networks	0.379	0.1
Total		3.72	

Hypothesis: 1 There is a relationship between the physical components and investment decision-making and financing in the bank.

We note from the table that the correlation coefficient between the physical components and the decision-making variable is 0.065. The relationship is positive and very weak, the significance level 0.787 is greater than 0.05.

Therefore, we reject the alternative hypothesis and accept the null hypothesis: that is, there is no influence relationship between the physical components and investment decision-making and financing in the bank.

Hypothesis 2: There is a relationship between the efficiency of the software used and the decision-making of financing in the bank.

We note from the table that the correlation coefficient between the efficiency of the program used and the financing decision-making variable is 0.219. The relationship is positive and very weak, the significance level 0.354 is greater than 0.05.

Thus, we reject the alternative hypothesis and accept the null hypothesis: that is, there is no influence relationship between the efficiency of the software used and the decision-making of financing in the bank.

Hypothesis 3: There is a relationship between the efficiency of communications and networks and the decision-making of financing in the bank.

We note from the table that the correlation coefficient between the efficiency of communications and networks and the financing decision-making variable is equal to 0.379. The relationship is positive and very weak, the significance level 0.1 is greater than 0.05.

Thus, we reject the alternative hypothesis and accept the null hypothesis: that is, there is no influence relationship between the efficiency of communications and networks and the decision-making of financing in the bank.

Conclusion

By studying the impact of the management information system on investment and financing decisions in banks, the following results emerged:

- The information system is based on three basic pillars, and they do not exist except by their presence, which are: information technology, with its two parts, physical and intangible, in terms of hardware and software, and the efficiency of individuals.
- Organizations always seek to build new management information systems or develop existing management information systems.
- Management information systems in organizations are adopted according to different models, and the process of building them goes through several stages.
- The management information system contributes to the decision-making process by providing the correct and necessary information at the right time, which helps the bank departments to take the right decisions.
- The efficiency of the management information system in banks is a basic requirement for the latter to achieve the desired goals.
- The senior management of banks is responsible for determining the directions of their investment and financing policy.

Recommendations

Based on the study objectives and results, this study recommends the following:

First: The need to work on building an information system equipped with the latest technology and information.

Second: Working on building an information base in banks aimed at registering their clients and their financial position so that the management can take the appropriate and timely decision.

Third: The necessity for the bank's senior management to be keen to provide the necessary support and facilities to workers using the system by encouraging them to use the information system, understanding their various needs and seeking their opinions about the problems they face when using the system until they are overcome.

Fourth: Organizing training programs for users of the management information system and operational and application software to identify the capabilities of the hardware and software used and not focus on how to use them only

Fifth: Do more studies on the subject of the study because of its great importance to the various sectors in general and to the banking sector in particular.

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