

## The Role of Management Information Systems in the Decision Making Process :An Analytical study

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## Abstract

This research aims to identify management information systems and its relation to decision making & As well as the theoretical foundation of both variables. The results indicate that there are significant impacts of management information systems on decision making.

**Keywords:** Management Information Systems, Decision Making.

## ملخص البحث:

يهدف البحث الحالي إلى التعرف على نظم المعلومات الإدارية وعلاقتها باتخاذ القرار، فضلاً عن التأصيل النظري للمتغيرين، وتشير النتائج إلى وجود تأثير معنوي لنظم المعلومات الإدارية على اتخاذ القرار.

**الكلمات المفتاحية:** نظم المعلومات الإدارية، اتخاذ القرار.

## Introduction:

MIS plays a vital role in not only collecting and managing information but also representing it in various useful formats for the top-level management to make important organizational decisions (Bhandari& Mathema,2022), as information allows decision makers to take decision; this presents a variety of what they call "technical attributes" (Victoria,2019). Therefore, a managerial information system is a procedure based on computerized data, and related to other procedures to provide information to support decision making and other management functions (Utami&Wening,2021).

Decision making process is one of the most important elements of management in today's organizations,because of its effect on the success or failure of the organization (Nadolna&Beyer,2021).

So, the relationship between information systems and decision making is a vital issue in the employment of information systems is an effective tool to achieve the objectives of business organizations and solve business problems such as decision making. Consequently, successful organizations recetntly depend on information systems to improve and enhance their business (Samer&Rawan,2018).

## **First: Research problem:**

**The researchers can formulate the problem of this research in the following main question:**

What is the role of managerial information systems in the decision making process? This question is divided into two sub-ones:

- 1- What is the theoretical framework of managerial information systems?
- 2- Do managerial information systems have effects on decision-making process?

## **Second: Research objectives:**

This research aims to achieve the following points:

### **A- Scientific importance**

- 1-Outline the theoretical framework of managerial information systems.
- 2-Determine the influence of managerial information systems on decision making process.

### **B- Applied Importance**

- 1- Improving the efficiency of organization management.
- 2- Increase productivity by making appropriate decisions.

## **Third: Research importance:**

A good management of information systems leads to good decision-making, so this study may contribute to formulate the scientific concept of managerial information systems and set up the scope of this concept in light of its effect on decision making process.

## **Fourth: Theoretical framework**

### **A: Management Information Systems**

First of all, and before defining Management Information Systems (MIS), It is very essential to mention what is meant by information system ; It is a system that includes a chain of communication channels inside an organization. As a

system, Management Information System (MIS) is an up-to-date one that involves numerous aspects such as individuals, machines, processes, data bases and models. The sources of gathered data help managers for better decision making are internal and external ones. So, the role of management information systems is to gather data and supply it to managers to achieve various tasks in the organization such as planning, implementing, control and most important is decision making. Thus, Management Information System (MIS) link internal processes and external aspects of technology for the best benefit and improvement of the business. Consequently, the availability of Management Information Systems (MIS) is very essential these days for all levels of management to achieve effective decisions.

In 1985 the famous professor Gordon Davies (Gordon b. Davis) from University of Minnesota Carlson School of Management, gives the definition which is a very classic one: Management Information System is a man-machine system using of computer hardware, software, artificial regulation, decision model and database, providing information support for the organization's operation, management and decision-making". This definition is more comprehensive, it illustrates the goal, function and composition of Management Information System (Zhang,2017).

An information system comprises 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 (Nayak, et al.,2018).

The functions of Management Information Systems (MIS) include collecting, processing, storing and producing relevant information to enhance the managerial processes in any organizations (Laudon & Laudon, 2009: Samer& Rawan, 2018). Management Information Systems (MIS) is defined as "is an effective tool to achieve the objectives the business organizations covering the application of people, documents, technologies, and procedures by management accountants to solve business problems such as decision-making, pricing a product, service or a business-wide strategy (Samer& Rawan, 2018).

Moreover, Management Information System (MIS) is a human/machine system integrated to provide information that supports the operations, management process and retrieval decisions in an organization. This system uses both software and hardware computer, manual procedure, model management, decisions and databases (Vafaei & Harati,2010:Utami&Wening, 2021).

This definition of Management Information System (MIS) copes with that of (Utami & WEning ,2021) , as " a human/machine system that mainly functions to provide information that supports management operations and taking decisions in organizations".

According to both study of (Wanjala et al.,2022; Bhandari&Mathem,2022) Management information systems (MIS) is an organized, diverse and automated information system that is concerned with the process of gathering, storing and transferring relevant information to support the management operations in an organization.

It can be said that Management Information System is that system which deals with data which is the input and converts it into information so, the generated information is very important for a number of processes such as both short-and long run functions as planning, control and problem solving. As Nayak mentions that Management Information System (MIS) involves various benefits such as enhance distribution channel management, builds brand equity which may lead to flexibility or improvement in its output level.

### **B: Decision making process:**

According to (Panpatte&Takale,2019) decision-making process includes seven steps: identifying the problem,collecting information, identifying the alternatives, developing alternative solutions, implementation of the decision, taking action and reviewing decision.

Decision-making process is one of the most important elements of management in today's organizations, mainly because it influences on the success or failure of the organization. Thus , knowledge of factors influencing the decision-making process is essential(Nadolna& Beyer,2021).

It should be emphasized that decision-making occurs at every level of management and concerns all management levels and employees in the organization. In analyzing decision-making process, the attention should be paid first to the concept of decision itself then to the decision-making process (Nadolna& Beyer,2021).

According to (Panpatte&Takale,2019 ) decision making is an intellectual process of selecting the best option among other choices. It results in an outcome which most probably is in form of action.

Decision making which is a very important managerial aspect can be classified into various categories: programmed decisions, which can be described as routine , repetitive and structured decisions automated by a sequence of procedures decisions not requiring the intervention of the decision maker (Victoria,2019 ).

Regarding , non-programmed decisions,they are characterized by novelty, in addition to being unstructured - non-automated decisions and depend on the decision maker's solution(Victoria,2019 ).

On the other hand, decisions can be strategic, tactical or operational. Strategic decisions are long-term decisions of an organization which concerns its direction and policy.Tactical decisions are medium-term decisions and are used to implement strategic decisions.Operational decisions depends on a day-to-day basis (Nadolna& Beyer,2021).

Decision - making is the process by which organizational members choose specific course of action out of several alternatives in response to opportunities and threats. The outcome of the decision-making process either results in a good or a bad decision (Wanjala et al.,2022).

Both researchers agree on the fact that the role of managerial information systems is to provide information to assist management in decision- making process.

## **Literature review:Fifth**

### **A: Managerial information system:**

Also, the results of (Awan&Khan,2016) indicate that there is positive relationship between performance of an organization and management information systems in it.

Moreover, the research of (Almazán et al.,2017 ) indicates that the companies that pay more attention to improve the quality of the information system to enhance the organizational outcomes.

According to the result study of (Purkar et al.,2023) indicates Management Information System (MIS) plays a crucial role in enhancing an organization's performance across dimensions such as profitability, innovation, and growth. At the operational level, MIS assists clerical personnel in transaction processing, addressing queries related to transaction data, monitoring the status of specific records, and providing references to various documents. Moreover, at the strategic level, MIS supports top-level management in goal setting, strategic planning, and the formulation and execution of business plans.

### **B: decision-making:**

The research of (Marchisotti et al.,2018) discusses how a decision is processed in the first management level, within five different organizations and found that organizational structure has the greater impact in the way of the first management level of the decisions.

As the study of (Panpatte&Takale,2019) indicates decisions are long, complex, highly unstructured procedure that have great impact on the future of organization and its effectiveness. Decision making process can help to make decisions more deliberat and highly effective by organizing relevant information and offering alternatives.

The research of (Nadolna& Beyer,2021) aims to analyze the determinants of decision-making process in an organization and found that economic and organizational factors were considered to be the most influential aspects in the

decision making process. Moreover, leadership style and organizational structure are the most influential aspects of the efficiency of decision making process.

The research of (Litvaj et al.,2022) focuses on decision making procedures and their relation to information management and quality management. The research points to the applications of management system to decision-making as a managerial function which is finally related to decision-making in quality management. Managers need to use effective information management in the decision-making process to improve this process and the link between data ,management, and decision making which will contribute to sustainable development.

Both researchers concluded that decision making is a kind of comparison between several alternatives and evaluating them to choose for the best benefit of them.

### **C- Review of Literature related to the Role of Management Information Systems in the Decision-Making Process:**

The study of (Aityassine,2017 ) undelines a relationship between the use of managerial information systems and the efficacy of managerial decision making.

The study of (Samer&Rawan,2018) shows a statistically significant impact of managerial Information System characteristics (quality, flexibility, timely, accessibility) on decision making process. This point is stressed , also, by the study of (Nayak et al.,2018 ) who stresses on the fact that managerial Information System (MIS) collects and processes data and offer it to managers at all levels to be used in decision making process.

According to (Utami&Wening,2021) the implementation of management information systems (MIS) in the field of health services have several impacts, such as patient satisfaction, reduce costs store data reliably in a digital environment,improve service quality& assist managers in decision making.



The study result of (Wanjala et al.,2022) clarify management information systems provides accurate, timely, relevant and complete information necessary to facilitate decision making in an organization, helping in planning, control and operational functions to be carried out effectively and efficiently.

Finally, it is believed that to enhance MIS, any organization that uses MIS to improve its decision-making processes should develop effective communication channels between management and information professionals(Bhandari&Mathema,2022).

**Sixth:Conclusion:** Throughout the previous presentation, the following results have been reached by both researchers :

1-Management Information Systems (MIS) is of paramount importance to reach effective decisions in an organization. The literatures presented in this study explained the significant and enhancing role of MIS in the decision-making process in an organization. MIS is viewed as an integrated user-machine system that provides information to support operations, management and decision-making process at various levels of an organization.

2- Managerial information systems enable organizations to plan,control and perform its operational functions.

3-Using managerial information systems (MIS) supports organizations in achieving its goals.

4- Managerial information systems (MIS) provide managers with information to take accurate and effective decisions.

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