مجلة تنمية الرافدين

Journal of
TANMIYAT AL-RAFIDAIN
(TANRA)
A scientific, quarterly, international, open access, and peer-reviewed journal

Vol. 41, No. 134
June 2022

Citation: Saleh, Modhar H., Azeez, Ahmed A., Shlash, Ali J., (2022)."The Role of Management Information Systems in Achieving Organizational Innovation: A Case Study at the Nineveh Health Directorate". ***TANMIYAT AL-RAFIDAIN***, 41 (*134*), 341 -357, https://doi.org/10.33899/tanra.2020.165650

P-ISSN: 1609-591X
e-ISSN: 2664-276X
tanmiyat.mosuljournals.com

Research Paper

The Role of Management Information Systems in Achieving Organizational Innovation: A Case Study at the Nineveh Health Directorate

Modhar H. Saleh [1] , Ahmed A. Azeez [2], Ali J. Shlash[3]
[1&2&3] Department of Business Administration, College of Administration and Economics, University of Mosul, Mosul, Iraq

Corresponding author: Modhar Hamed Saleh, Department of Business Administration, College of Administration and Economics, University of Mosul, Mosul, Iraq

modhar_hamed@uomosul.edu.iq

DOI: https://doi.org/ 10.33899/tanra.1970.174714

Article History: *Received*: 7/4/2022; *Revised*: 6/5/2022; *Accepted* 12/5/2022; *Published*: 1/6/2022.

Abstract

The research aims to determine the effect of management information systems (MIS) in promoting organizational innovation. A sample from the Nineveh Health Department was selected to achieve this goal by focusing on a problem statement that questions (the extent of the importance and effect of management information systems on promoting organizational innovation in the organization). The research aimed to test the effect of management information systems through its three dimensions, namely Human resources, hardware, and software on promoting organizational innovation. There is a good level of utilization of MIS in the researched organization, and this is due to the dimensions of MIS used by the researched organization. The research concluded with a set of recommendations, the most important is investing in the relationship between MIS and organizational innovation that serves the reality of the organization in an actual and vital way, as well as increasing the adoption of the latest advanced technologies to enhance the speed of business completion, which leads to the development of work and the use of the system permanently. The research also recommends paying attention to research and development, providing sufficient financial allocation, and seeking the assistance of the experts in the department in order to reach organizational innovation.

Key words:
Management Information Systems, MIS, Organizational Innovation.

مجلة

تنمية الرافدين

(TANRA): مجلة علمية، فصلية، دولية، مفتوحة الوصول، محكمة.

المجلد (٤١)، العدد (١٣٤))،
حزيران ٢٠٢٢

الاقتباس: صالح, مضر حامد، عزيز, أحمد علي وشلاش, علي جاسم (٢٠٢٢). " دور نظم المعلومات الادارية في تحقيق الابداع المنظمي" *تنمية الرافدين*، ٤١ (١٣٤)، ٣٤١-٣٥٧،
https://doi.org/10.33899/tanra.2020.165650

P-ISSN: 1609-591X
e-ISSN: 2664-276X
tanmiyat.mosuljournals.com

ورقة بحثية

دور نظم المعلومات الادارية في تحقيق الابداع المنظمي: دراسة حالة في دائرة صحة نينوى

مضر حامد صالح[١]؛ أحمد علي عزيز[٢]؛ علي جاسم شلاش[٣]
جامعة الموصل، كلية الإدارة والاقتصاد، قسم إدارة الاعمال

المؤلف المراسل: مضر أحمد صالح ، جامعة الموصل، كلية الإدارة والاقتصاد، قسم إدارة الاعمال

modhar_hamed@uomosul.edu.iq

DOI: https://doi.org/10.33899/tanra.2020.165650

تاريخ المقالة: *الاستلام:* ٢٠٢٢/٤/٧؛ *التعديل والتنقيح:*٢٠٢٢/٥/٦؛ *القبول:* ٢٠٢٢/٥/١٢؛ *النشر:* ٢٠٢٢/٦/١.

المستخلص

يهدف البحث إلى تحديد دور نظم المعلومات الإدارية في تعزيز الابداع المنظمي. من هنا تم اختيار عينة من دائرة صحة نينوى لتحقيق هذا الهدف من خلال التركيز على بيان المشكلة (مدى أهمية وتأثير نظم المعلومات الادارية على تعزيز الابداع المنظمي في المنظمة). تأثير نظم المعلومات الإدارية من خلال أبعادها الثلاثة، وهي الموارد البشرية والأجهزة والبرمجيات على تعزيز الابداع المنظمي ، وهناك مستوى جيد من استخدام نظم المعلومات الإدارية في المنظمة موضوع البحث ، ويرجع ذلك إلى أبعاد نظم المعلومات الإدارية المستخدمة. واختتم البحث بمجموعة من التوصيات من أهمها الاستثمار في العلاقة بين نظم المعلومات الإدارية والابداع المنظمي الذي يخدم واقع المنظمة بطريقة فعلية وحيوية ، فضلاً عن زيادة الاعتماد على أحدث التقنيات المتقدمة لتعزيز سرعة إنجاز الأعمال، مما يؤدي إلى تطوير العمل وتطوير استخدام النظام بشكل دائم. كما يوصي البحث بالاهتمام بالبحث والتطوير ، وتوفير مخصصات مالية كافية ، والاستعانة بخبراء القسم للوصول إلى الابداع المنظمي.

الكلمات الرئيسة

نظم المعلومات الإدارية, نظم المعلومات, الابداع المنظمي

Introduction

By observing the unfolding of the information revolution and the rapid and multidimensional developments that have affected and still affect human societies to varying degrees, information has become one of the most important organizational resources. Thus, organizations have become more motivated to develop their information systems to meet their informational needs which support the managerial decision-making process. Information is the cornerstone on which decisions are based at various management levels and in all areas of work, especially with the advent of international competition, the increasing growth in the size of companies, and the automation of management and production processes in companies. Modern management in organizations seeks information systems that are capable of obtaining data from their sources in the surrounding environment and collecting and processing data that can be utilized when necessary to provide sound decisions. This study comes to address the role of management information systems in promoting organizational innovation within the Iraqi environment in the Nineveh Health Department.

To achieve goals, the research was divided into three main sections, the first section covers the methodology of the study, the second deals with the theoretical framework and the concept of the MIS and its importance and components, while the third section is devoted to the field side of the research and the most prominent conclusions that have been reached.

1. Research Methodology

1.1 The Problem Statement

Many factors affect organizational innovation in business organizations, especially information technology. The field study of the researched organization revealed that the researched organization does not appropriately use information technology to support the process of organizational innovation. Thus, the problem of the study can be identified through the following question: Is there awareness in the researched organization that the management information system is an important means of obtaining organizational innovation?

1.2- **The Importance and Objectives of the Research**:

Proceeding from the importance of the management information system in the researched organization and the importance of organizational innovation, the importance of this study stems from aiding to achieve the desired goals of the organization, including access to the appropriate organizational innovation, in addition to working on clarifying the concept of the management information system and its components, to know the possibility of its effect on organizational innovation. This study also aims to identify the relationship and effect between the management information system in its three dimensions, individuals, and the hardware and software component on organizational innovation in the researched organization.

1.3- Research Hypotheses.

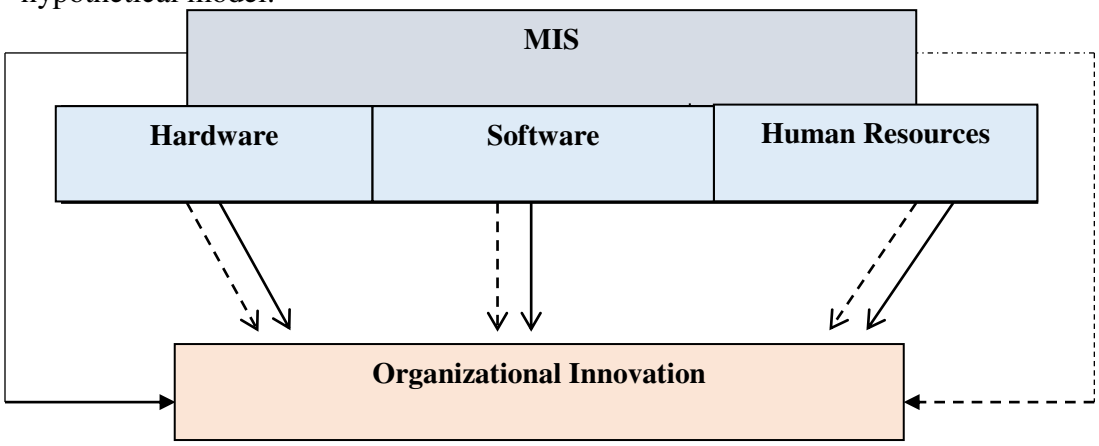
Based on the research problem, the study hypotheses are formulated as follows:

1. (H1): There is a significant relationship (correlation and effect) between Management Information Systems at the macro level and organizational innovation

2. (H2): There is a significant relationship (correlation and effect) between Human Resources and organizational innovation
3. (H3): There is a significant relationship (correlation and effect) between Software components and organizational innovation
4. (H4): There is a significant relationship (correlation and effect) between Hardware components and organizational innovation

1.4 The research Model.

To test the research hypotheses and address its problem, the research adopted the following hypothetical model:



1.5 Research Method and Tools

The study adopted the descriptive analytical approach to test its hypotheses by studying the relationships between the main variables which data are derived from the researched organization, and by adopting the questionnaire as a research tool. The items in the questionnaire were formulated based on conceptual frameworks of the subject from relevant literature. The answers to the questionnaire are rated based on a five-point Likart scale. The collected data were correlated and analyzed by several statistical tools including correlation and regression analysis using the *SPSS* software package.

1.6- The Research Population and its SAMPLE.

Nineveh Health Department was chosen for the research for being a vital organization with a direct effect on community service and its need for organizational innovation in providing high-quality services that meet the needs and expectations of its patients. Questionnaire forms were distributed among some heads of departments, divisions, and units in the organization, and (31) forms were retrieved with a recovery rate of (100%) valid for analysis.

Some Previous Studies

The Study of Muhammad and AL-Zahra (2018) " The impact of information systems and knowledge management on organizational innovation"

The study aims to identify the joint use of information systems and knowledge management in achieving organizational innovation for Sonatrach, as it is one of the most important leading organizations in Algeria / the hydrocarbon sector.

One of the results of the study is that there is an impact of information systems on the dimensions of organizational innovation, and there is an impact of knowledge management on the dimensions of organizational innovation, at the level of significance (0.05). Also, there is a joint effect of the information system and knowledge management together on innovation. The organizational achievement in the organization at the level of significance (0.05)

Al-Najjar and Malkawi Study (2010) " Information Systems and their impact on innovation levels "

The study aims to identify the impact of information systems of various types on the levels of innovation in Jordanian insurance companies. Where information systems represented different types of systems, while the levels of innovation represented innovation at the individual level, innovation at the group level, and innovation at the organizational level.

The study concluded that all levels of innovation in the Jordanian insurance companies were affected by the different types of information systems, and accordingly, we accept the existence of a statistically significant effect at the level of significance (0.01) for the different information systems on the levels of innovation in the Jordanian insurance companies. Depending on the results of the research, the researchers made many recommendations for Jordanian insurance companies

2. The Theoretical Framework

Management Information System: **its Concept and Importance**.

The management information system is one of the most important fields of management theory and its modern applications in various organizations, especially at present when information has become the primary material in the practice of management activities in light of the rapid changes. Davis and Olson (1985) defined it as an integrated system that connects the machine and the user in order to provide information to support the management functions in the organization and using a computer, ready-made software, databases, and manual procedures, to provide the information needs of decision-makers on time and the required quality and quantity. O'Brin (1997) opinionated that the management information system is a system that performs in an organized way to prepare information about the past, present, and future of internal processes and to explore the external variables in the environment.

Information is the driving nerve for systems and organizations of all kinds, for this reason, the management information system derives its importance from the information that represents a vital resource through which organizations seek to survive and excel and achieve their goals

through achieving communication between any two parties. Therefore, the importance of the management information system can be highlighted by the opinions of some researchers, including (Larry & Ras, 2014, 2) for the following reasons:

1. The increase in size and complexity of organizations.
2. The use of internal communications that enable to reduce the time and effort of managers in business, research, and information analysis.
3. Providing the necessary data and processing it in a timely and accurate manner that suits the needs of decision-makers.
4. The great development in management and the increase in research and development expenditures and similar development in the means used.
5. The emergence of the global economy and the transformations in industrial economies towards knowledge bases and information.
6. The emergence of the digital organization where work is done through networks.

Components of the MIS:

The management information system's elements that are required to be available to successfully implement the information system vary according to the nature of the researchers' opinions and the characteristics of their research. However, these components can be categorized as follows (Al-samarrai& Al-zoubi, 2004, p54-55):

1- **Hardware Components**: The technical and electronic components and physical tools that represent the basic infrastructure for the operation of the management information system.
2. **Software Components**: The intangible components that include the basic systems and software required for the operation of the management information system.
3. **Human resources**: Human resources are the source of information and its receiver and the real capital of any project, as human resources represent the human and functional aspect of the management information system.

Stages of developing a management information system:

Setting up and developing a management information system requires careful and detailed planning by those in charge. Thus, the required output from this system must first be determined to serve decision-making in the facility or a particular management unit followed by a feasibility study to determine the possibility of designing the required system to provide the output needed by the management based on the organization's objectives and the constraints it faces. The next step in this process is termed the analysis stage in which the system is described in a way that allows its further development. If this stage is done correctly, it is followed by the design stage in which the parts of the system, its sub-units, and the relationship between them are identified in a way that ensures their integration to achieve the desired final product. The final stage in developing the MIS is called the application stage in which the designed system is implemented by defining and designing programs, executive procedures, and documents for collecting the required data, and writing programs that have been agreed upon. Implementing the system includes also conducting some tests on the programs and sub-units of the MIS to ensure its

safety, and then carrying out the maintenance of those programs regularly to discover any defects and treat those defects promptly (Razavi & Attarnezhad, 2013, 235).

Organizational innovation: its concept, importance, and characteristics.

Innovation is a very complex phenomenon it is often confused with the term invention, but in the end, they have two different meanings. The invention is the first appearance of an idea for a particular product or a new process, while innovation is the first attempt to implement this idea in practice (Fagerberg, et. al, 2005, 115-147). It is the development as well as the implementation of new ideas by people who, over time, share interactions with other people in an institutional context. Innovation is considered a process. Schumpeter distinguished five different classes of innovation; new products, new production methods, new sources of supply, exploiting new markets, and new ways of organizing business. Schumpeter stresses that innovation is an outcome. Crossan and Apaydin (2010) view innovation as both a process and an outcome. Innovation is the production or adoption, assimilation, and exploitation of value-added novelty within the social and economic spheres, the expansion and renewal of products, services, and markets, the development of new production methods, and the creation of new management systems. Innovations occur in many social spheres and contexts, such as organizations or economies. Innovation is important for organizations because it enables them to differentiate, advance, and compete successfully in their markets. Innovation can occur at the micro-level (the individual), the macro-level (the industry), and the meso level (the organization). Thus innovation at the organizational level can be classified as organizational innovation (Bekkenutte, 2016, 9). In general, the concept of organizational innovation refers to a mechanism that organizations rely on to adapt to the changing environmental conditions of competition, technological progress, and the expansion of the labor market, by producing newer products or technologies and systems. In the simplest terms, organizational innovation is the tendency of the organization to develop new or improved products or services and the success of the organization in bringing those products/services to market (Gumusluoglu & Ilsev, 2009, 461-473). It can also be defined as the organizational capacity that is based on constantly renewing ideas and knowledge in new services, products, or processes for the benefit of stakeholders (Razavi & Attarnezhad, 2013, 227). Organizational innovation is a multi-faceted construct that includes the development, generation, and implementation of a new behavior or an idea that is considered new to the organization (Damanpour, 1996). During the innovation process, ideas are transformed into new services or products, new technologies, new organizational structures, or new management approaches (Azar & Ciabuschi, 2015, 6). Accordingly, Amabile (1998) defined innovation as the production of innovative and constructive ideas and that organizational innovation is the successful realization of innovative ideas within an organization. Oldham and Cummings (1996) also described innovation at the individual level and innovation at the organizational level (Razavi & Attarnezhad, 2013, 227).

Both level definitions have in common that they focus on organizations. The Organization is the level of analysis of innovation and that does not rule out the effect of other levels, such as

the environmental level, or the individual level on organizational innovation. Also, innovation can occur outside the boundaries of the organization, but there is always an association with the organization. The organization is how decision-making processes are organized within the organization, how the tasks of decision-making authority and skills are distributed within the organization and among decision-making units, and the type of information and communication structures. The organization is processes and structure. Organization innovations may relate to specific departments, or functions, or may include the overall structure of the organization and its strategy. A characteristic of organizational innovation is that it includes some kind of novelty and focuses on finding new and more efficient ways to manage tasks and functions along the production chain path (Bekkenutte, 2016, 13).

Technological and organizational Innovation.

According to socio-technical system theory, any change in the technological system of an organization requires changes in the managerial system to adapt to the requirements made by the technological system. In other words, organizational innovation is a necessary precondition for technological innovation to be fully implemented and exploited. Lam (2005) stated that "the ability of an organization to innovate is a prerequisite for the successful use of new technology." Successful implementation of technological innovations depends on changes in the managerial components of the organization (i.e. organizational innovations). Moreover, Teece (2010) states that to benefit from technological innovations, organizations must adopt new organizational forms, new organizational styles, and new business models that have equal (if not greater) importance to the business enterprise (Azar & Ciabuschi, 2015, 9).

This literature has enhanced our understanding of the effects of organizational structure on the ability of organizations in how learning and knowledge creation as well as the generation of technological innovation. However, we know little about how internal organizational dynamics and actors interact with technological as well as environmental forces to shape organizational development. There is still uncertainty about how and under what conditions organizations transition from one model to another. There is also ambiguity in the role of technological innovation in driving organizational change. Thus, progress in these areas will require greater efforts and at different levels of multidisciplinary research and analysis to add a deep and insightful view that goes beyond the narrow perspective (Lam, 2004, 32). Several authors agree that transformational leadership affects organizational innovation in five different ways. These methods can overlap with each other or can have cause-and-effect relationships between them (Razavi & Attarnezhad, 2013, 230), and these ways can be described as follows:

1- Promoting Intrinsic Motivation: Transformational leadership instills intrinsic motivation in employees. Human resources are more innovative through motivation as their ability to generate new ideas depends on their perception of the workplace environment and especially the organizational support for innovation. Studies have shown that individuals who value security, tradition, and compliance are significantly influenced by transformational leadership in their innovative traits.

2- Psychological Empowerment: Several studies including Zhou (1998) and Jung et al., (2003) found that innovative people demonstrate high performance resulting from personal autonomy. Transformational leadership increases autonomy by allowing adding to them psychological empowerment. Psychological empowerment involves building self-confidence, innovation, and personal development.
3- Innovative Organizational Climate: Transformational leadership affects the innovation and creativity of individuals by rebuilding the characteristics of their organization and replacing them with an innovative organizational climate. Flexible leadership in the organizational structure encourages innovation in the workplace and gives people the incentive to take risks.
4- Success of Innovations in the Market: Transformational leadership can also create a positive effect on the success of innovations in the labor market by demonstrating strong confidence and vision and motivating individuals to search for innovative and quality-oriented projects.
5- Extending the Borders and Business Entrepreneurship: Transformational leaders play an external role in increasing organizational propensity to act innovatively through extending the borders of the organization and business entrepreneurship that are critical to accelerating the market success of innovative ideas and actions.

3. practical side

3.1 Description and Identification of Research Variables

Description of the research sample:

The research sample is represented by a group of (31) respondents in the Nineveh Health Department; 31 forms were distributed, and the following describes the characteristics of the sample members.

Table (1): The characteristics of the research sample

Gender	**Frequency**	**%**
male	17	54.8
female	14	45.2
Age	**Frequency**	**%**
25 or less	–	–
26 – 30	-	–
31 – 35	5	16.1
36 – 40	9	29
14 – 45	6	19.4
46 or more	11	35.5

Gender	Frequency	%
Academic qualification	**Frequency**	**%**
Bachelore	21	67.7
Diploma	-	–
higher education	10	32.3
Years of employment	**Frequency**	**%**
5 or less	1	–
6 – 10	4	12.9
11 – 15	12	38.7
16 –20	6	19.4
21 –25	5	16.1
26 or more	4	12.9

From Table (1), we note that the percentage of the highest age group among the respondents is (46 years or more) this is due to the nature of the fieldwork that these jobs need in terms of experience. As for the academic qualification, holders of a bachelor's degree represented the highest percentage, and this is due to the nature of dealing with the available information system as well as the nature of the work of the sample. As for the years of work experience, the highest percentage is represented by those who have (11-15) years of experience. This means that the organization is capable of interacting with the available existing management information system in the organization to achieve organizational innovation.

Description of the management information system Dimensions:

- **Human Resources**.

Table (2) Frequency distribution, mean, standard deviation, and percentages for the human resources

Variable	Stronglyi Dsagree		Disagree		Neutral		Agree		Strongly Agree		Arithmetic mean	Standard deviation
	%	Frequenc	%	Frequenc	%	Frequenc	%	Frequenc	%	Frequenc		

Variable	Stronglyi Dsagree		Disagree		Neutral		Agree		Strongly Agree		Arithmetic mean	Standard deviation
	%	Frequenc	%	Frequenc	%	Frequenc	%	Frequenc	%	Frequenc		
X1	-	–	-	–	19.4	6	48.4	15	32.3	10	4.12	0.718
X2	–	–	3.2	1	9.7	3	58.1	18	29.0	9	4.12	0.718
X3	–	–	–	–	19.4	6	67.7	21	12.9	4	3.93	0.57
X4	–	–	–	–	22.6	7	64.5	20	12.9	4	3.90	0.59
X5	–	–	6.5	2	12.9	4	58.1	18	22.6	7	3.96	0.79
Average	–	–	4.85	1.5	16.8	5.2	59.36	18.4	21.94	6.8	4.01	0.68

It is clear from Table (2) on the use of the system that the general average of the arithmetic mean was (4.01) and this means that there is a positive agreement about the importance of the Human Resources dimension in the management information system, and the best contribution to this dimension was for the items (X1) and (X2), as the value of their arithmetic mean was(4.12) with a standard deviation of (0.718), while the lowest arithmetic means was(3.90) Regarding item(X4) (Technical specialists possess the necessary skills and experience in the field of wireless systems). These results generally indicate, through the average arithmetic mean, the necessity for the organization to have the human resources capable of using and interacting with the management information system and to help achieve organizational innovation.

- **Software Component**.

Table (3) Frequency distribution, mean and standard deviation, and percentages of the Software component.

Variable	Strongly disagree	Disagree	Neutral	Agree	Stronglyagree	Arithmetic mean	Standard deviation

	%	Frequenc	%	Frequenc	%	Frequenc	%	Frequenc	%	Frequenc		
X6	–	–	9.7	3	19.4	6	54.8	17	16.1	5	3.77	0.844
X7	–	–	6.5	2	9.7	3	64.5	20	19.4	6	3.96	0.752
X8	–	–	9.7	3	6.5	2	51.6	16	32.3	10	4.06	0.89
X9	3.2	1	9.7	3	29.0	9	51.6	16	6.5	2	3.48	0.88
X10	9.7	3	6.5	2	29.0	9	45.2	14	9.7	3	3.38	1.08
Average	16.6	16.8	8.42	2.6	18.72	5.8	53.54	16.6	16.8	5.2	3.73	0.89

It is clear from Table (3) that there is a positive agreement at the level of the general average of (software component), as the arithmetic mean value was (3.73), and the highest contribution to this dimension was due to the item (X8) (The organization takes into account the necessary protection and security when relying on software), with an arithmetic mean of (4.06) and a standard deviation of (0.89). The lowest contribution to this dimension was due to the item X10 (The organization makes sufficient financial allocations to purchase licenses for proprietary software), with an arithmetic mean of (3.38)

- **Hardware Component.**

Table (4) Frequency distribution, mean, standard deviation, and percentages for the hardware components

Variable	Stronglydisagree		Disagree		Neutral		Agree		Strongly agree		Arithmetic mean	Standard deviation
	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency		
X11	6.5	2	–	–	16.1	5	67.7	21	9.7	3	3.74	0.89
X12	–	–	12.9	4	9.7	3	54.8	17	22.6	7	3.87	0.92
X13	–	–	12.9	4	9.7	3	54.8	17	22.6	7	3.87	0.92
X14	–	–	9.7	3	19.4	6	48.4	15	22.6	7	3.83	0.89
X15	3.2	1	6.5	2	25.8	8	48.4	15	16.1	5	3.67	0.94

Average	18.72	5.8	10.5	3.25	16.14	5	54.82	17	18.72	5.8	3.8	0.91

Table (4) shows that there is a positive agreement at the level of the arithmetic mean for the dimension of the hardware component reaching (3.8) with a standard deviation of (0.91) and the highest contribution percentage was for items (X12) and (X13) with an arithmetic mean of (3.87) and a standard deviation of (0.92,) while the lowest arithmetic mean was 3.67 for (X15) (The organization makes sufficient financial allocations for the purchase of computers).

Organizational Innovation (dependent variable)

Table (5) Frequency distribution, mean, standard deviation, and percentages for Organizational Innovation

Variable	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Arithmetic mean	Standard deviation
	%	Frequency	**%**	Frequency	**%**	Frequency	**%**	Frequency	**%**	Frequency		
X16	–	–	3.2	1	19.4	6	61.3	19	16.1	5	3.90	0.700
X17	3.2	1	6.5	2	22.6	7	54.8	17	12.9	4	3.67	0.90
X18	3.2	1	6.5	2	25.8	8	48.4	15	16.1	5	3.67	0.94
X19	3.2	1	3.2	1	25.8	8	54.8	17	12.9	4	3.70	0.86
X20	–	–	9.7	3	22.6	7	45.2	14	22.6	7	3.80	0.90
X21	–	–	3.2	1	25.8	8	58.1	18	12.9	4	3.80	0.70
X22	–	–	9.7	3	35.5	11	45.2	14	9.7	3	3.54	0.80
X23	–	–	6.5	2	12.9	4	64.5	20	16.1	5	3.90	0.74
X24	–	–	9.7	3	32.3	10	38.7	12	19.4	6	3.67	0.90
X25	–	–	9.7	3	25.8	8	41.9	13	22.6	7	3.77	0.92
X26	3.2	1	6.5	2	19.4	6	41.9	13	29.0	9	3.87	1.02
X27	3.2	1	6.5	2	22.6	7	48.4	15	19.4	6	3.74	0.96
Average	3.2	1	6.74	2.08	24.20	7.5	50.26	15.58	17.47	5.41	3.75	0.86

From Table (5), it is clear that the arithmetic mean rate was (3.75), and this indicates a good agreement among the respondents regarding the possibility of achieving organizational innovation using the dimensions of the management information system. This was supported by the standard deviation value of (0.86). The best contribution to this variable was for questions (X16) And (X23) (individuals working in our organization can present innovative ideas) and (training programs contribute to increasing the innovative ability and innovative skills of workers) and this is consistent with the reality of the researched organization and the nature of its work, The highest percentage was for Item(X16) with an arithmetic mean of (3.90) and a standard deviation of (0.700). The lowest Arithmetic mean was for Item (X22) (our organization's management provides material and informational facilities to constantly develop new ideas) which has an arithmetic mean of (3.54) and a standard deviation of (0.80).

3.2 Analysis of the correlations between the research variables:

In order to complement the requirements of the descriptive analysis, the correlation relationships between the research variables have been identified, as Table (6) shows that there are significance positive statistical correlations between the independent variable (management information system) and the dependent variable (organizational innovation), which amounted to (0.828**) at the level of Significance (0.05), Thus, the first hypothesis (H1) is accepted.

Table (6) the correlation between management information system and organizational innovation

MIS	**independent variable** / **dependent variable**
0.828^{**}	organizational innovation

N=31 $^{**}P \leq 0,05$

As for the partial level, the results indicated that there is a significant correlation between the dimensions of the independent variable (management information system) represented by (human resources - software-hardware) and the dependent variable (organizational innovation), but in varying proportions. As shown in Table (7). Thus, the second, third and fourth hypotheses (H2, H3, and H4) are accepted

Table (7) Correlation coefficients between the two variables at the micro level

management information system	Independent

Hardware	Software	Human resources	dependent
0.808**	0.648**	0.773**	Organizational Innovation

N=31 **P ≤ 0,05

3.3 Analysis of the effect relationship between the research variables:

Table (8) Simple linear regression and analysis of variance for the effect of Management information system model on organizational innovation.

R²	T value		F value		MIS		independent / dependent
	tabular	calculated	Tabular	calculated	B1	0β	
0.685	1.69	7.950	4.18	63.197	0.828	0.414	Organizational Innovation

N=31 df = 30 **P ≤ 0,05

Table (9) Simple linear regression and analysis of variance to model the effect of the management information system on organizational innovation at the micro level Organizational innovation

					MIS
T	F	R²	B1	0β	
6.572	43.187	0.598	0.773	0.941	**Human resources**
4.576	20.944	0.419	0.648	0.567	**Software**
7.373	54.358	0.652	0.808	0.657	**hardware**

N=31 df = 30 **P ≤ 0,05

T **tabular= (1.69) , F tabular= (4.18)**

Source: Prepared by the researchers based on the results

It is clear from tables (8) and (9) that review the effect of the management information system in terms of its dimensions in achieving organizational innovation at the macro and micro levels that the value of the t indicators in the management information system (human resources – software components - physical components) is significant at the level of(0.05) and with a degree of freedom of (30), and the calculated (F) value is greater than the tabular (F) value in (human resources - software components - physical components), which indicates the significance of the models presented at a level of significance of(0.05) and a degree of freedom of (30) in these indicators, which supports the truth of the research scale by percentage of (95%), which is a high percentage, as in Table (10).

Table (10) Measuring the truth of the questionnaire

Reliability Statistics

Cronbach's Alpha	N of Items
.952	27

Through these results, all hypothesis can be accepted, which states (there is a correlation and effect between the management information system in terms of its components and organizational innovation).

5. Conclusions and Recommendations

Conclusions

Based on the results, many conclusions were presented as follows:

1- There is a good level of utilization of MIS in the researched organization, and this is due to the dimensions of MIS used by the researched organization.
2- The researched organization has the management information system requirements emphasized by the completion of its work electronically.
3- The results indicated that the researched organization possesses specialists who possess the necessary skills and experience in the field of wireless systems.
4- The researched organization suffers from insufficient financial allocations to purchase licenses for owned software.
5- The results indicated that the organization is trying to benefit from meeting the important people in the organization to come up with new ideas or methods of performance.
6- The results, in general, indicated that there is a significant relationship between the management information system and organizational innovation, and this is due to the correctness of employing the study variables and directing them in the direction that serves the organization and achieves the purpose of dealing with the management information system.

Recommendations

Based on the conclusion, the researchers recommend the following:

1- There is potential for enhancing the organization's management information system by maintaining and developing the system according to the organization's requirements.
2- Activating the role of the organization's management information system by dealing with its components, obtaining greater innovation, and providing new services on an ongoing basis.
3- Adopting the latest advanced technologies to enhance the speed of completion of work, which leads to the development of work and the permanent use of the system.
4- Updating and developing the organization's programs through the use of experts to serve the nature of its work.
5- Investing in the existing relationship between MIS and organizational innovation that serves the reality of the organization in an actual and vital way.

6- Monitoring sufficient financial allocations to purchase the software and hardware needed by the research organization in the process of dealing in the management information system.

References:

Azar, G., & Ciabuschi, F. (2017). Organizational innovation, technological innovation, and export performance: The effects of innovation radicalness and extensiveness. International business review, 26(2), 324-336.

Bekkenutte, Eefje , (2016), Organizational Innovation Practices: A strategy-as-practice perspective on performance increasing configurations of organizational innovations in Dutch manufacturing SMEs, Master thesis Strategic Management , Radboud University, Netherlands .

Fagerberg, J., Mowery, D.C., Nelson, R.R., (2005), The Oxford Handbook of innovation. Oxford University press, Oxford.

Gumusluoglu, L., & Ilsev, A. (2009). Transformational leadership, creativity, and organizational innovation. Journal of business research, 62(4), 461-473.

Lam, Alice,(2004), Organizational Innovation, BRESE, School of Business and Management, Brunel University, west London.

Larry,K & Ras, Z. (2014). Special issue on future directions for intelligent information systems. Journal of Intelligent Information Systems, 43(3).

Muhammad, shanshona and AL-Zahra, Bretl, (2018), The impact of Information Systems and knowledge Management on Organizational Innovation, Journal of Humanities and Social Sciences, Vol. 38

Al-Najjar, Fayez and Malkawi. Nazem , (2010), Information Systems and their impact on innovation levels, Damascus University Journal of Economic and Legal Sciences , Vol. 26 , No. 2.

Razavi, S. H., & Attarnezhad, O. (2013). Management of organizational innovation. International Journal of Business and Social Science, Vol. 4 No. 1.

Al-Samarrai, Iman Fadel, and Al-Zoubi, Haitham Muhammad, (2004), Management Information Systems, first edition, Dar Safaa for Publishing and Distribution, Amman, Jordan.