

The effect of information technology on knowledge management maturity

An exploratory study on a sample of upper and middle departments at Dhi Qar University

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Abstract:

The current research aims to demonstrate the effect of information technology in its dimensions (artificial intelligence, interactivity and connectivity) on the maturity of knowledge management in its dimensions (individuals, processes, and skill), as the use of advanced technology called in our present time (the fourth industrial revolution) leads to new knowledge of existing technology or the invention of technology. Thus, the process is as if it were a circle revolving around the goals of organizations of various kinds. The problem that the organization faces is the extent of awareness of the importance of using information technology and its effect on the maturity of knowledge management. Therefore, the main objective of the research is to diagnose the level of knowledge management maturity in the organization as well as to identify the capabilities and potentials of the research community regarding technology and its availability on the ground.

The colleges, centers and units of Dhi Qar University were chosen as an area for conducting the research, and the research sample was intended if the size of the research community reached (150) from the upper and middle administrations in it. Research program (SPSS V.25) for the purpose of extracting descriptive statistical methods to test hypotheses. The research found that there is a positive and significant effect of information technology on the maturity of knowledge management, and this indicates that the use of information technology by senior and middle leaders at Dhi Qar University enhances the maturity of knowledge management they have.

Key words: information technology, knowledge management maturity.

The first topic

Research Methodology:

The purpose of this study is to measure the effect of information technology on knowledge management maturity and this can be achieved by answering the following questions:

1. Does the administration of Dhi Qar University have a perception about information technology and the maturity of knowledge management according to what was stated in the theoretical framework?
2. To what extent is the management of Dhi Qar University aware of the importance of maturity in knowledge management?
3. What is the relevance and effect of information technology on knowledge management maturity?
4. What is the relevance and effect of knowledge management maturity in information technology?

research importance.

1. The research dealt with a recent topic related to the work of governmental educational institutions, because they operate in a rapidly changing environment where information technology is considered one of its basic means to achieve its goals.

2. Helping Dhi Qar University to know the effect of information technology and to determine the dimension most influencing the maturity of knowledge management in it.
3. The research adds a modest contribution to the currently available body of knowledge for the effect of information technology on knowledge management maturity.

Search variables.

The research assumes the existence of an independent variable (information technology) that affects the dependent variable (knowledge management maturity), as follows

1. The independent variable:

□ Information technology: is all the hardware, software and networks that collect and process data and information, convert, send, receive and store data through various means such as verbal, written or visual using various communication media (Fernaldi et al., 2020: 4). Its dimensions are artificial intelligence (hardware, software, software, databases), interactivity (individuals, organizational procedures), and connectivity (networks, communications, the Internet) (Salman and Yunus, 2015: 153).

2. The dependent variable:

Knowledge management maturity: The extent to which an organization can consistently manage knowledge assets and utilize them effectively (Martins et al., 2019: 4). His dimensions are people, process, and technology (Pamulapati & Bodicherla, 2019: 23-27).

Hypothesis search scheme.

Figure (1) shows the hypothetical outline of the research.



Figure (1) the hypothetical outline of the research

research assumes.

The first main hypothesis:

There is a statistically significant correlation between information technology and knowledge management maturity, and the following sub-hypotheses are branched out:

1. There is a statistically significant correlation between artificial intelligence and knowledge management maturity.
2. There is a statistically significant correlation between reactivity and knowledge management maturity.
3. There is a statistically significant correlation between connectivity and knowledge management maturity.

The second main hypothesis:

There is a statistically significant effect relationship between information technology and knowledge management maturity. The following sub hypotheses are divided into:

1. There is a statistically significant effect relationship for artificial intelligence on knowledge management maturity.
2. There is an influence relationship of significant statistical significance for interaction in knowledge management maturity.
3. There is a significant statistical effect relationship for connectivity in knowledge management maturity.

The second topic

First: Information Technology

1. The concept of information technology.

Information technology refers to the technical side of information systems. The definition of Information Technology System (ITS) can be adopted as "a set of interconnected parts that work together as a system that includes technological facilities and administrative procedures that support the work of devices, equipment and software specialized in collecting, processing, storing and transferring data through communication networks in order to ensure the performance of the required work in the appropriate time and form." (Norrie, 2015: 151) It is important to mention that the term information and communication technology is a broad concept of disciplines and its concept in the United States of America was called media technology because of the integration of computers with telephone lines and in the name of computers and communication in Japan. And in the name of remote communication and informatics with the influence of media sciences in Spain, France and the Netherlands, as this term was popular in Europe (deleeuw, 2010: 26).

From the above, it can be said that information technology refers to the acquisition, processing, storage and delivery of all types of information and data using computer technologies, communication system, networks and the Internet. It is an integrated framework for obtaining and developing information technology to achieve a specific strategic goal. To create an IT system that can adequately respond to the expected and current needs of the organization in the rapidly changing environment in which technology plays a major role. Leading organizations are investing heavily in technology, especially information technology, such as teamwork software, electronic payment systems, data storage and data mining, to achieve improvements in the quality of customer services and speedy process processing.

2. The importance of information technology.

(Fernaldi et al., 2020: 4) pointed out that the era in which we live is the age of information that gives the possibility to create new knowledge based on the availability of computers everywhere and the global networks of communication that gave birth to electronic communication, publishing and digital libraries. And creating unprecedented job opportunities and knowledge for organizations that possess human and technical resources for strategic knowledge of information, the most valuable and rare elements of production are patents and methods of research and development. The matter is no longer focused on the production of material things but rather by producing programs and focusing on artificial intelligence in production to simulate the human mind in thinking, behavior and decision-making. . As Jusufi (2013: 138) sees the development of information technology as the core of contemporary society development. The rapid development of information technology has led to the globalization of work process and business development. And other than the completion of various commercial business and services, from their usual direct state to their completion through computer networks and the Internet. The availability of information technology equipment everywhere, in offices, factories, schools, homes and even in people's pockets is the reason for the change in the way it is accomplished. Information technology profoundly changes the behavior and communications of organizations and individuals. The world seems much smaller and continuous without restrictions on time and space thanks to the development in information technology, especially the Internet. (Zenib, 2017: 37) believes that the emergence of the importance of information technology in what it provides to organizations of new business by making them deviate from the traditional system in completing their work in one location. To provide opportunities for establishing multiple business networks between separate parties around the world.

(Lee et al., 2018: 10) believes that the importance of information technology is its contribution to the following:

1. Leveraging management and manufacturing integration in research and development, design thinking, service, marketing and manufacturing to obtain higher added values.
2. Strengthening the links between academia, industry and cooperation for sustainable development.

3. Facilitate starting and managing businesses through various platforms.
4. Promote the development and marketing of self-sustainable products and services.
5. Enhancing the professionalism of biotechnology (used in medicine).
6. Establish government standards and a common infrastructure for technology development.
7. Assist in technical and vocational training and talent development systems, including design efficiency, business development and management.
8. Facilitates the establishment of general policies of the organization, financing, systems of tax benefits, control and administration.
9. Modern information technology can be supportive of talent development.

3. Dimensions of information technology.

Information technologies and individuals appear in a complex mixture to be in turn the basic dimensions of information technology, including networks, which are the main characteristic of information technology from information systems, and we find there are a lot of philosophical intellectual writings trying to implement information technology that differed according to the outlook and competence of her book in terms of names and implicitly agreed with the contents of its dimensions, from the book Separating the names of the information technology dimensions to make them five dimensions (Heikal, 2015: 16; Al-Obaidi, 2013: 4), and some of them defined them in four (Klemetti & Katariina, 2019: 14) or three dimensions and excluded the other section of them from merging the most important component in naming information technology with Other dimensions (Salman and Yunus, 2015: 153) under the name (connectivity, hardware and equipment) and because the dimensions (software, hardware, equipment and databases) represent the components of artificial intelligence, which is both science and art (Shinawa and Al-Bakri, 2018: 4), so we will take The three dimensions of information technology (artificial intelligence, interactivity, connectivity) as main dimensions, as it implicitly included most of the dimensions that most researchers dealt with, namely:

1. Artificial intelligence:

It is an important technology that supports daily social life and economic activities and contributes significantly to the sustainable growth of the economy and solves many problems faced by organizations and in recent years attracting attention as a key to growth in developed countries such as Europe and the United States and developing countries such as China and India, and attention has been focused mainly on The development of artificial intelligence information communication technology (ICT) and robot (RT) technology in it (Kyushu et al., 2018: 370). Artificial intelligence today is more properly known as weak AI, and is designed to perform a special task such as only facial recognition or searching on Only the Internet or only driving a car, while a weak AI may outperform humans in a specific task, such as playing chess or solving equations, so general AI will outperform humans in nearly every cognitive task. In recent years, the US government has supported basic research on artificial intelligence, centered on robotics and pattern recognition (sound, images, etc.). Microsoft has announced simultaneous translation robots and innovative image recognition technologies, and Amazon uses artificial intelligence for autonomous robots in its delivery systems. Facebook has also developed a facial recognition technology based on artificial intelligence called "Deep Face" (Institute et al., 2018: 2). Artificial intelligence is the main technology expected to improve innovation in ICT and robotic technology in the near future. (Taigman, 2014: 2-3) It is a sub-computer science that builds physical components that simulate human behavior using computer programs. It is related to many other sciences such as linguistics, psychology, mathematics, as well as knowledge engineering. Its mission is to give devices the ability to perform functions that simulate the behavior of the human mind in terms of completing tasks, learning languages, understanding, thinking and solving problems in a workplace called virtual reality, which reenactments human intelligence through the computer and broadens its areas of use by giving it the capabilities of guessing and independent behavior in Cognitive fields such as physics, engineering and mathematics (Al-Qandalji, 2002: 110). It consists of.

- **Devices and equipment:** are all types of physical components and media used in the process of data and information processing, the most important of which are computers, storage devices, backup duplication, printing, display screens, input devices, multimedia, electrical control devices, and others (Alter, 2002: 6).

- **Programs:** They are all the different programs that the physical components need to work and connect between them, such as operating systems that help in operating and controlling the computer, and application programs such as programming languages (C ++. Basic), statistical analysis programs, symbol processing, tables, database programs, communication and drawing programs .. etc. (Salman, 2018: 101)

Databases: It is a store that contains data describing all the events and processes taking place in the organization and is stored in the form of manual or electronic files with which the information system turns them into information, so it is very important for any information system (Moussa, 2019: 7) .

2. Interactive.

It is a concept that has multiple dimensions as well as its uses. It is an important integrative concept for various research disciplines. What it means for a computer programmer differs from what it means for a media researcher. And one of the most important features of the information society is the ability of the future of communication to interact and exchange continuous reactions with other subscribers of network data and information (Al-Zubaidi, 2015: 153). He believes (Alkwaz and Al-Tahhan, 2018: 275) is the ability of technology to enable the user to be a transmitter and a receiver at the same time, so that the participants in the communication process can exchange roles, which allows creating a kind of interaction between activities. It is characterized by complete electronic connectivity for all network users, networking and exchange of roles and its most important dimensions:

Individuals: It includes the end users of the system who use the system or its products of information and data, as well as the technicians who are responsible for the maintenance, operation, development, and technical management of information technology, meaning they are the technicians, the users and the support class (Min Xu et al., 2018: 90-92)

3.Organizational procedures: It is sometimes expressed in evidence or guidance documents that contain guidelines and instructions that must be observed when using the system, including operating procedures, procedures for preserving and retrieving lost data, security procedures and development procedures. As it must clarify the steps of operations in a sequence by clarifying the instructions necessary to achieve the desired goals within the rules, laws and instructions in a confidential and organizational framework to preserve the information, that is, it includes (regulations and laws. Rules and procedures. Planning and implementation procedures) (Jusufo, 2013: 138-142).

Conductivity.

Since devices and equipment are of different manufacture, connectivity means that they can be linked easily beyond the place and the way in which they were manufactured. This means the extent and suitability of the various communication devices to allow communication between subscribers and the possibility of exchanging information, data and resources at a reasonable and safe cost, and the most important components.

- **Networks and communications:** It is the basis that distinguishes information technology from information systems. The network can be formed by connecting two or more computers through conductive connectors such as optical fibers and copper wires, or by wireless connectors by installing transmitters and receivers between them such as satellites, infrared rays and waves the radio. To be cooperative between a group of institutions and information centers that use modern means of communication and computers by providing an opportunity to exchange information through means of communication for all participants. (Al-Zubaidi, 2015: 153) Communications networks have received great attention from research and industry for their ability to provide access to information and news. Thanks to their superiority and their ubiquitous accessibility that enabled them to provide a higher quality of service at a relatively low price to users, satellite networks can also provide a remarkable increase in the types of fixed and mobile satellite services. . As a potential component of

the 5G ecosystem, satellite networks are a promising technology for smart grid, Internet of Things, Wireless Sensor Networks (WSN), space clouds and communications networks. All of them guaranteed global service, support innovative 5G scenarios, and reduce operational costs. Future satellite networks are expected to be integrated, hybrid and heterogeneous, which can be widely deployed and expanded using different platforms in geostationary orbit and non-geostationary satellites. Along with the main emerging technologies. (Xiaojuan et al., 2019: 63) We can divide networks into three types (local network, umbrella network, wide network).

• **The Internet:** The Internet appeared for the first time as a research and defense network called (ARPANET) in the United States in the late sixties to link important centers in the army with research computers and scientists so that it would be safe even if some lines of communication were cut off and based on the principle of sending messages in the form of intermittent packets that collect successively in a place Received at the receiving end. It is the fruit of cooperation between the military and researchers during the Cold War. With the spread of the computer industry and the increase in people's interest, the Internet became a media channel and the fastest technology spread among the public, and communication with the service provider developed to include several methods such as shared line technology (DSL), digital line (RNIS) and communication by satellite (satellite) or through a leased line (LS) is the line that provides exclusive Internet access and is dedicated to private use, such as the lines used in video conferencing (VLOP) used in government institutions and major universities. The Internet provides many services, including: (Wassila, 2018: 40-48): (Web service, e-mail, voice over protocol, discussion group services, newsgroups, and file transfer protocol services)

Second: the maturity of knowledge management

1. The concept of knowledge management maturity:

There is a small number of evidence related to knowledge management maturity in universities, and assessing knowledge management maturity in governmental and private organizations is important to determine the current status of knowledge management and how areas of knowledge management can be improved in them, and according to previous studies, the use of knowledge and knowledge management has become a great condition for the continuation of the life of dynamic organizations. And innovative, the ability to compete in markets and transactions relates to the acquisition, development and implementation of individual and organizational knowledge. Knowledge management maturity is the state of knowledge management in an organization and it is a structured approach to implementing knowledge management and the extent to which organizations develop knowledge management through the growth of knowledge management in relation to organizational culture, existing management systems or technological requirements, acquisition, storage and dissemination of knowledge. The maturity of an organization can be determined by studying the maturity level of the knowledge management dimensions (people, processes, and technology) that constitute the measure of knowledge management maturity in the organization. Knowledge management maturity is a guideline or criterion for assessing the organizational situation in the field of knowledge management by reviewing the factors that affect knowledge management maturity and its critical success factors.

Knowledge management systems are complex and it is difficult to predict the behavior of the system. Therefore, in order to achieve a general understanding of the behavior of the system, we must study how the factors affect each other over time and the feedback relationship between them. This relationship must explain how the system works over time. As there is a positive relationship between knowledge management maturity and organizational competence (Kruger & Johnson, 2010: 3), as the application of knowledge management in sufficiently mature organizations leads to important changes in the organizational process, infrastructure and cultural in the organization (Khatibian et al., 2010)).

. The importance of knowledge management maturity.

Knowledge management maturity positively affects the organizational results of the organization's innovation, product improvement and employee development, as well as determines the level of the current organization's capacity that affects knowledge management processes that in turn represent the intellectual capital of the organization to achieve a sustainable competitive advantage. Reducing costs and increasing profits by reducing the level of operational and administrative costs of operations, which leads to increased profits, as well as improving the overall quality through the continuous participation of all individuals to improve the performance of the organization, and also contributes to increasing the efficiency of research and development activity through knowledge management processes in showing intellectual contributions. For individuals, their storage, participation and application, as well as contributing to community service through the organization's contribution to solving its problems (Abu Naser et al., 2016: 4). It also contributes to working by spreading awareness, helping to preserve and transfer expertise within the organization among individuals from one generation to another, and provides a clear strategic vision for the organization's management to develop the human, technical and administrative resources necessary to develop the organization's work, and gives it greater flexibility in competition, decision-making, innovation, raising and improving the productivity of individuals and simplifying Procedures and reducing the effort exerted in completing jobs and maintaining knowledgeable individuals by limiting their departure from the organization by providing for their needs and earning their loyalty (Pee, 2009: 3-5). It is the main aspect of the organization that enables the organization to be more productive and provide services of high complexity. The main one is to enhance organizational performance by making use of collective knowledge in the organization, encouraging creativity and facilitating the innovation process, and brings the benefit of sharing experience between the project and production levels, building confidence and avoiding making past mistakes. Through knowing how to manage knowledge, collective learning and finding different ways to improve the process, improve and encourage knowledge management practices in the organization and push forward the development of companies in the long term to reach the possession of sustainable competitive advantages. And knowledge of the best agile practices to manage their operations, and adapt these agile practices and monitor them to achieve maximum benefits for the organization. Flexible maturity means encouraging activities such as communication, cooperation, commitment, nurturing, sharing of values, etc. It stresses the importance of continuous improvement according to the changing business environment and encourages learning and creativity by applying the concept of knowledge management in developing software to share previous experience related to the service or product and avoiding making mistakes, and by interacting with team members, building trust and communication that allows the organization to develop activities and lead to Improvement and innovation. (Pamulapati & Bodicherla, 2019: 4).

3. Dimensions of knowledge management maturity.

We notice through previous studies that dealt with knowledge management that there is a variation in its naming and number, some of them counting it in four or two dimensions, each dimension contains a number of elements, and some of them make it five or three dimensions. However, the most important dimensions are (people, processes, skill, technology). Since there is no global agreement on the dimensions of the maturity of knowledge management, the dimensions (people, processes, skill) were chosen and the technology dimension was excluded, since research has adopted the information technology dimension an independent dimension, so that the dimensions are as follows:

- **Individuals:** The promotion of knowledge management that is based on the principle that every individual of the organization achieves success and benefits from the sharing and creation of knowledge, an institutional culture that respects and appreciates individual knowledge and invests in the knowledge specialist and promotes commitment and mutual trust among the organization's members (Pasher et al., 2011: 49 -50). Knowledge management is based mainly on resources, namely the tangible resource represented by technology and infrastructure, and the intangible resource, which

is the human and structural capital, including intellectual property and organizational capital. Whereas, the organization, storage, circulation and use of knowledge as a means of creating value cannot be achieved without human capital and the existence of an organized culture that urges knowledge (Koshinen, 2013: 92-94). And since knowledge management included many common elements, the most prominent and common element among researchers was the personnel and organization component, which highlights the importance of these two elements (Auer et al., 2016: 97-98). Based on competitiveness and new forms of management, organizations seek through resource policies. Its own humanity is to establish a connection with its individuals and aims in some way to influence the behavior of these individuals and their participation in the organizational environment; Organizations have been affected by the increasing need for competition, performance standards, monitoring, flexibility, focus on results, focus on customers, and community monitoring. All of these variables are more difficult to measure and more conflicting. Therefore, the maturity of knowledge management and the increase in organizational commitment as one of the objectives through which the organization seeks to achieve better performance and productivity in relation to knowledge management and organizational commitment because they are effectively linked to two items of knowledge management, namely knowledge transfer and sharing (Marques et al., 2019: 2). The human resource and knowledge management are the most important factors within the organization that help it achieve a competitive advantage. In this sense, organizations should pay attention to human factors to increase their commitment to organizations to take full advantage of the knowledge they possess. Institutions are increasingly interested in enhancing commitment among their members on the basis of the various advantages associated with improving the performance of individuals and improving performance through emotional commitment, improving the use of knowledge, reducing the rate of work turnover and increasing the rate of transfer. Knowledge (Razzaq et al., 2018: 4).

Process: The process relates to aspects related to knowledge management activities that assist the organization in generating, discovering, capturing, sharing and applying knowledge and the processes branching from it from its dissemination among employees, transfer of expertise and information and its management, work procedures and strategic planning in the organization (Hussinki et al., 2017: 5). It also means acquiring, understanding, storing, implementing and sharing knowledge in the process of organizational learning that relates to the strategies and culture of the organization and is a complete systematic management strategy that distributes, transfers, develops, implements and stores knowledge in order to be able to increase the efficiency and effectiveness of the individuals working in the organization (Gholami et al., 2013: 206). In knowledge management, its activities were described as processes named using a lot of terms and concepts according to the perceptions of researchers in fields of study such as development, construction and external formation (Calvo et al., 2015: 6) according to the opinions of researchers among them who counted three steps: knowledge generation, construction and distribution (Syed et al. And some of them defined it in five steps, namely, knowledge identification, creation, storage, sharing and use (Pacheco, 2016: 37), and some described it in four steps, namely, knowledge acquisition, storage, transfer and application (Obeidat et al., 2018: 2)

Skill: Non-cognitive skills such as social skills play a major role in economic life and social skills are increasingly rewarded in the job market. People management skills reduce employee attrition, especially attrition that the company wants to avoid as well as be rewarded by the organization as it positively affects hierarchical levels, countries and professions, providing an accurate quantitative estimate of administrative differences within the same multiple organization (Hoffman & Tadelis, 2020: 1). Skills refer to the competencies, talents, abilities and personal experiences of individuals and it is related to how people link between understanding, knowledge and work. The results of a study show that organizations need multi-skilled employees to exploit the advantages arising from adopting information and communication technology. The ability of an organization to improve existing skills and acquire new skills is its strongest competitive advantage, and as a result technology

enables individual knowledge "expertise" to transform into knowledge that can be achieved on a large scale (Anvari et al., 2011: 11286). It was also known as the capabilities and talents of the organization's individuals and their personal experiences, which indicate that the organization needs multiple skills for its members to take advantage of the advantages of using information technology (Helmos, 2017: 85). The skills are characterized by being acquired and not hereditary or innate as they are refined by practice, experience and experience and can be divided into four types (subjective, artistic, humanistic, and perceptual) (Al-Rousan, 2017: 431)

The third topic

Practical side.

First: Analyzing data and evaluating research metrics.

In order to facilitate the data analysis process, it is important to denote the search variables with a set of symbols, as shown in Table (1) below.

IJSER

Table (1) coding the dimensions and variables of the study

symbol	paragraphs	dimensional	Variable	n
AIIT	5	Artificial intelligence	Information Technology	1.
IIT	5	Interactive		
CIT	5	Conductivity		
INKM	5	Individuals	Knowledge management maturity	2.
PRKM	5	Processes		
SKKM	6	Skill		

In order to identify the presence of the missing values, the researcher extracted the duplicates and used the (Boxplot) test to identify the presence of outliers and anomalies in the process of entering data in the statistical program (SPSS v 25), and in light of this, this paves the way to check the reliability of the analysis results that are extracted. The researcher used the (Kolmogorov - Smirnov) test to find out whether the answers to the questionnaire are within the normal curve or not, and the current research assumes that the sample data are drawn from a population whose data do not follow the normal distribution. This test is verified by determining the value of (p) as it is Acceptable when it is greater than (0.05), and the result of the test value is greater than the level of significance (5%), and this means that the data of the research sample does not differ significantly from the normal distribution of data for the two study variables. Using the program (Amos.V.25) to measure constructive validity, as the first paragraph shows, I participated in the interpretation of the interactive dimension by (0.63), which means that the increase in the value of the paragraph by ((0.63 standard deviation) leads to an increase in the value of the artificial intelligence dimension by one standard deviation. And that an increase in the value of the paragraph by (0.69) standard deviation leads to an increase in the value of some operations by one standard deviation, and so on, as shown in Table (2) and (3).

Table (2) Indicators related to the information technology variable and the study decision

Study decision	Comparison	the value of the index	The index is
The form accepts	Less than 5	91329/83=1100	χ^2/ df
The form accepts	Greater than 0.50	90.4	GFI
The form accepts	Greater than 0.50	98.7	CFI
The form accepts	Greater than 0.50	98.3	TLI
The form accepts	Less than 0.08	0.30	RMSEA

Table (3) Indicators related to knowledge management maturity variable and study decision

Study decision	Index The index value of comparison	the value of the index	The index is
The form accepts	Less than 5	135239/91=1486	χ^2/ df
The form accepts	Greater than 0.50	90.0	GFI
The form accepts	Greater than 0.50	92.8	CFI
The form accepts	Greater than 0.50	91.5	TLI
The form accepts	Less than 0.08	0.67	RMSEA

Second: The statistical description.

1. Information Technology: This paragraph relates to the statistical description of the information technology variable and through the statistical description of its three basic dimensions, as follows:

- **Artificial Intelligence:** The paragraph for (the use of information technology provides the acquisition of new knowledge and experiences) has obtained the highest arithmetic averages, as its arithmetic mean reached (4.08) and a standard deviation of (0.894), and the coefficient of variation for it was 22% and within a high response level and reached The relative importance of this paragraph (75.5%). Likewise, the section on (The college administration uses artificial intelligence programs to accelerate the completion of questionnaires and scientific measures) has obtained the lowest arithmetic averages, as its arithmetic mean reached (3.76) and a standard deviation of (0.971), and the coefficient of variation was 26% and within a high level of response and reached The relative importance of this paragraph (75.2%). As for the general average of the artificial intelligence dimension, its arithmetic mean reached (3.97), and its standard deviation was (0.698), while the coefficient of variation was (18%).
- **Interactivity:** The paragraph related to (our college has the appropriate organizational climate to exchange information) has obtained the highest arithmetic averages, as its arithmetic mean reached (4.08) with a standard deviation of (0.934), and the coefficient of variation was 23% and within a high level of response and the importance was The percentage for this paragraph (81.6%). As for the section on (Encouraging the college administration to use modern technologies and providing the necessary training for that), it obtained the lowest arithmetic averages, as its arithmetic mean was (3.68) with a standard deviation of (1.044), and the coefficient of variation was 28% and within a high response level and reached The relative importance of this paragraph (73.6%). As for the general average for the reactivity dimension, its mean was (3.90), and a standard deviation was (0.732), while the coefficient of variation was (19%).
- **Connectability:** The paragraph for (the college administration relies on communication networks that are easy to connect and use for the exchange of information) has obtained the highest arithmetic averages, as its arithmetic mean reached (3.92) with a standard deviation of (0.973), and the coefficient of variation was 24% within the level of The answer is high and the relative importance of this paragraph (78.4%). Likewise, the paragraph concerning (there is a common database that everyone can access within the limits of the powers granted to them) has obtained the lowest arithmetic averages, as its arithmetic mean reached (3.83) with a standard deviation of (0.931), and the coefficient of variation was 24% within the level of an answer. High and the relative importance of this paragraph (76.6%). As for the general average of the conductivity dimension, its arithmetic mean reached (3.87), and the standard deviation was (0.726), while the coefficient of variation was (19%). The general rate of the information technology variable was 3.916, with a standard deviation of ((0.628), as shown in Table (4).

Table (4) the arithmetic mean and standard deviation of the information technology variable and its dimensions

standard deviation	Dimension / variable	Dimension / variable	n
.6980	Artificial intelligence	Artificial intelligence	1
0.728	Interactive	Interactive	2
.7260	Conductivity	Conductivity	3
The general rate of the information technology variable	The general rate of the information technology variable	The general rate of the information technology variable	

2. Knowledge management maturity: This paragraph relates to the statistical description of the knowledge management maturity variable and through the statistical description of its three basic dimensions, as follows:

- **Individuals:** The paragraph for (individuals trust each other in their work and can rely on the knowledge and skills of their colleagues) obtained the highest arithmetic averages, as its arithmetic

mean reached (4.09) with a standard deviation of (0.866), and the coefficient of variation was 21% within the level of an answer. The relative importance of this paragraph is high (81.8%), and the paragraph concerning (there is a general tendency to exchange experiences and cooperation between individuals working within the college) has obtained the lowest arithmetic averages, as its arithmetic mean reached (3.85) with a standard deviation of (0.989). The difference coefficient has 26%, and within a high level of response, the relative importance of this paragraph is (77%). As for the general average for the dimension of individuals, its mean was (3.96), and the standard deviation was (.648). As for the coefficient of variation, it reached (16%).

- **Operations:** The paragraph for (individuals share knowledge with their colleagues at work) has obtained the highest arithmetic averages, as its arithmetic mean reached (3.91) with a standard deviation of (0.938), and its variation coefficient was 24% and within a high response level and reached relative importance For this paragraph (78.2%). It is noted that the paragraph on (individuals depend in their work on written sources, documents, organizational procedures and instructions) has obtained the lowest arithmetic averages, as its arithmetic mean reached (3.83) with a standard deviation of (0.995), and the coefficient of variation for it was 26% and within a high response level. And the relative importance of this paragraph (76.6%). As for the general average of the conductivity dimension, its arithmetic mean reached (3.88), and the standard deviation was (.722). As for the coefficient of variation, it reached (19%).

- **Skill:** The paragraph for (Encouraging the Positive Behavior of Individuals by the College Administration) has obtained the highest arithmetic averages, as its arithmetic mean reached (3.94) with a standard deviation of (0.965), and the coefficient of variation for it was 24% and within a high response level, the relative importance of these was reached Paragraph (78.8%). It is also noticed that the paragraph on (The College Administration uses the scientific method of thinking) has obtained the lowest arithmetic averages, as its arithmetic mean reached (3.78) with a standard deviation of (0.994), and the coefficient of variation for it was 26% and within a high response level and reached relative importance For this paragraph (75.6%). As for the general average for the skill dimension, its arithmetic mean reached (3.870), and the standard deviation was (0.701), while the difference coefficient reached (18%). The general rate of the knowledge management maturity variable was (3.90) with a standard deviation of ((0.596) and as shown in Table (5).

Table (5) the arithmetic mean and standard deviation of the knowledge management maturity variable and its dimensions

standard deviation	The arithmetic mean	Dimension / variable	n
.6480	3.96	Individuals	1
.7220	3.88	Processes	2
.7010	3.87	Skill	3
.5960	3.90	The general rate of the information technology variable	

Third: testing research hypotheses:

The results of the test of the direct effect of the information technology variable on the knowledge management maturity variable as shown in Table (6)

Table (6) the results of testing the direct effect of the information technology variable on knowledge management maturity

P	C.R.	S.E.	Estimate variable	Track variable
0.004	4.642	.108	.501	Knowledge management maturity <--- Information Technology
0.000	2.845	0.102	0.291	Information Technology <--- Knowledge management maturity

It is noted from Table (6) the significance of the effect of the information technology variable on the knowledge management maturity variable, as the effect value of the information technology variable

reached (.5010), while the value of the critical ratio was (4.642), which is a significant value because its value is greater than 1.96, and the value of (P Value is (0.004), which is not significant, being less than (0.05). Therefore, the hypothesis is accepted.

Conclusions and recommendations:

First: Conclusions:

1. There is an effect of information technology on the maturity of knowledge management in a high amount, and from that it can be said that it derives its importance from the strength of its influence on (individuals, processes and skill).
2. The upper and middle managements have been able to employ information technology in addressing administrative problems and increasing their levels of knowledge maturity.
3. The disparity in information technology used in the colleges is the reason for the disparity in the levels of knowledge maturity for the university in general.
4. There is a tendency for the sample researched, especially in light of the Korna crisis, to use information technology and its tools to accomplish various activities and tasks.
5. Training programs are among the most important steps to be taken on the road to reaching knowledge maturity and benefiting from information technology
6. Colleges focus on traditional methods of accomplishing tasks, and the blurry vision of modern technology limits the desire of individuals to express their ideas, participation, and creativity.

Second: Recommendations.

1. Giving the concept of the fourth industrial revolution (modern information technology such as the Internet of things and the three-dimensional printer) the attention it deserves in the future directions of the university as it represents the function on which the achievement of cognitive maturity is based on the capabilities it provides in representing, experimenting and applying ideas, which leads to the creation of new knowledge that leads to Creating greater flexibility in facing current and future challenges and overcoming them.
 2. Attention to those with competencies and skills, providing a work environment that helps them to innovate, develop, and preserve them, and attract core competencies to achieve what the university aspires to, as the human element is one of the most important dimensions of knowledge management maturity.
 3. Modernizing and developing the information technology systems in the colleges in line with the global technological progress in order to support the university's orientation to achieve its goals.
 4. It is necessary for the faculties under study to focus on the organizational context and the supportive organizational cultures that support knowledge, develop the technological aspect, and form committees or centers specialized in the disclosure, storage, transfer and application of knowledge (which is applied in almost all countries of the world) through reports that are understandable to all and maximize interaction Between the recipient and the source in clear, systematic ways that document the knowledge generated by the new employees and apply it in the college practices that raise the level of its performance.
 5. Encouraging working individuals to present new ideas related to work development, rewarding the moral and material owners of creative ideas, and adopting their implementation.
 6. Writing and documenting work procedures and policies to enhance the creation of new knowledge and facilitate its transfer.
 7. Motivate working individuals to engage in global training programs and facilitate their participation, and increase communication with international organizations to keep pace with the developments the world has reached in developing information technology and developing knowledge maturity.
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