

# The Impact of Knowledge Management Success Factors on Electronic Business in Jordanian Telecom Companies

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**Abstract**— The study aimed to identify the impact of knowledge management success factors represented (organizational culture, administrative leadership, organizational structure, information technology infrastructure, standards) on electronic business (electronic information, electronic communications, electronic work flow). The study community included all employees in Jordanian telecom companies, where the three telecommunications companies (Umniah, Zain, Orange) agreed to participate in the study, and (240) questionnaires were distributed to employees in those companies, and (191) questionnaires were retrieved, of which (188) were valid questionnaires for analysis with an actual response amount of (78.3%), which is similar to the final study sample. The study used the descriptive analytical method, and assumed a positive impact of the factors of success of knowledge management on electronic business in Jordanian telecom companies. The results showed that there is an awareness of the factors of success of knowledge management among employees in Jordanian telecom companies, where the arithmetic averages for the organizational culture variables, information technology infrastructure and knowledge measures came within the level of high importance, and the variable of administrative leadership and the organizational structure variable came within the level of intermediate importance in the current study, as well all averages of e-business dimensions came within the high level of importance, as well as the overall e-business variable, in addition to that, the results indicated a positive impact of the factors of success of knowledge management on e-business in Jordanian telecom companies; as the variable of knowledge management success factors explained (65.7%) of the variance in e-business, and the results also indicated that the variable of information technology infrastructure was the most influencing electronic information, and the second ranked in the impact of organizational culture, while the variables of administrative leadership do not affect the organizational structure and measures of knowledge on electronic information, and the results also showed that the variable of the information technology infrastructure ranked first in the impact on electronic communications,

followed by the effect of the variable of organizational culture, and then the organizational structure variable, while the administrative leadership and knowledge standards variables do not affect, finally it showed the results indicated that the variable of the IT infrastructure was the most influential in the electronic work flow, and came second in the organizational structure, and the organizational culture ranked third, and the fourth came the variable of administrative leadership, while the electronic work flow variable was not affected by knowledge measures based on the results.

**Keywords:** Knowledge Management Success Factors, E-Business, Telecom Companies, Jordan.

## 1. Introduction

Business organizations strive to advance technologically; Due to the interactive environment in which you are located, these organizations have recognized the necessity for knowledge-based creativity; For the sake of its growth and the sustainability of its survival [16], and for this reason, most of the departments have adopted the application of knowledge management and seek to activate their operations practices; To raise the organization's efficiency and achieve its competitive advantage [17]. Today, the world is witnessing a shift to knowledge-based business (K-business) and thus the emergence of knowledge organizations, as this transformation forces all organizations, regardless of their different goals and activities, to reform themselves or engineer their business in order to keep pace with the model of the knowledge-based organization [18].

E-business has become an approach to achieving business goals in the organization, through the use of networks, computers and technology. To exchange information, as this approach enables the implementation of the organization's activities across value chains, in addition to supporting the decision-making process on which those activities are based, and in order for the company to work on adopting electronic business, it must go through three stages, which are preparedness, dependability (consensus), and routine (Intent to use, actual use) [14].

## 2. Problem Statement

Knowledge management is a prerequisite for the existence of e-business. In order to work in the e-business environment, there must be knowledge about markets, customers, products, services, methods, processes, competitors, employee skills, organizational environment, etc.

Organizations conduct their business electronically, seamlessly throughout the world, through intranets and across the Internet. Knowledge management systems are very necessary to ensure the value extracted from the organization's internal and external knowledge [11]. There is also an active movement in the world today to invest modern technologies to develop the organizations' business and transform them into electronic organizations, using the Internet and advanced applications of computers to complete all its administrative work and transactions, and accomplish all its functions of marketing, production, financing and investment with high speed and accuracy [20].

In summary, the study problem can be represented by the main question, what is the effect of the factors of success of knowledge management on electronic business in Jordanian telecom companies, and the following questions are branched from it:

**Q1-** What is the reality of the success of knowledge management in Jordanian telecom companies?

**Q2-** What is the level of application of electronic business (electronic information, electronic communications, electronic work flow) in Jordanian telecom companies?

### 3. Research Objectives

The study seeks at the scientific and practical levels to shed light on the impact of knowledge management success factors on e-business. From this goal, the following sub-goals are derived:

1. Knowing the reality of applying the factors of success of knowledge management in the Jordanian telecom companies surveyed.
2. Learn about the level of application of electronic business (electronic information, electronic communications, electronic work flow) in Jordanian telecom companies.
3. Knowing the impact of knowledge management success factors (organizational culture, administrative leadership, organizational structure, information technology infrastructure, standards) on electronic business (electronic information, electronic communications, electronic work flow).
4. Presenting a set of results, recommendations and proposals, on the application of knowledge management to decision makers in the Jordanian telecom sector, which would serve this sector, and other similar sectors, and clarify the course of future research trends.

### 4. Research Importance

The developments taking place in our current age in the field of information and technology, the emergence of the Internet and the amazing spread of various applications on this network, led to the development of knowledge and the emergence of electronic business models, these terms did not appear from a vacuum, but rather came after a series of radical changes accomplished by information and communication technology. And which, in turn, contributed to a huge revolution in various fields, especially in the world of business, and these developments have great credit for creating a competitive advantage by relying on knowledge management and e-business approaches as an alternative to traditional approaches in accomplishing various activities, in addition to the need to control and manage the vast amount of data. Information and knowledge creation in light of e-business and its development [11].

### 5. Research Limits and Scope

The scope of the study shall be as follows:

- **Human Limit:** Employees in Jordanian Telecom Companies.
- **Institutional limitation:** Jordanian telecom companies (Umniah, Orange, Zain) in their main branches / Amman Governorate.
- **The Objective Limit:** In its objective limitation, it was limited to studying the effect of the success factors of knowledge management on electronic business in Jordanian telecommunications companies.
- **Time Limit:** Data collected and analyzed in 2020.

### 6. Literature Review

- A study of [7] aimed to research the relationship of knowledge management success factors represented (administrative leadership, organizational culture, information technology infrastructure, and knowledge standards) and knowledge management processes, on a sample of (200) employees in (25) companies Thai, and the study found that there is an effect of demographic factors of gender, age, level of education, and job location in knowledge management, in addition to having positive effects of knowledge standards and infrastructure in knowledge management.
- A study of [11] aimed to examine the relationship between the factors of success of knowledge management represented by (administrative leadership, organizational culture, organizational structure, information technology infrastructure, and standards), on a sample consisting of (70) managers, from different Malaysian private companies, and the results confirmed positive relationships between each of the five factors, but the managerial leadership factor was the least influential.
- A study of [2] aimed to research the relationship between the factors of success of knowledge management represented by (human resources, information technology, administrative leadership, organizational learning, organizational strategy, organizational structure, and organizational culture) on innovation and organizational performance. In the Iraqi mobile communications sector, on a sample of (220) managers, the results showed that the factors of successful knowledge management have had a significant positive and direct impact on organizational performance, through innovation as a mediator.
- A study of [3] aimed to know the factors and advantages affecting knowledge management, and these factors were (organizational culture, resources, information technology, human resources management, strategy, motivational means, operations and activities, training and education, and infrastructure Regulatory and Metrology), on (200) projects in small and medium-sized companies in the governorate of Irbid, and the most important finding of the study is the presence of an impact of these factors of various importance and priorities.

### 7. Theoretical Framework

#### First - Knowledge Management

It is defined by [19] as an integrated and interconnected system of values, skills, experiences, competencies and technologies represented by individuals with excellent brains, organizations use them to the best of their ability to help in making decisions and achieving the goals of the

organization to ensure its survival, growth and continuity of competition. It is a strategy to get the right knowledge from the right people at the right time, to help others, and to put the resulting information into action in healthy ways; to improve organizational performance [12].

#### **Knowledge Management Objectives**

The knowledge tool also aims to function as a network of activities, and contributes to the transformation towards economic networks and e-business [11].

#### **Knowledge Management Success Factors**

##### **Obstacles to Implementing Knowledge Management**

The study talks about the success factors of knowledge management, and when talking about success factors, it is worth mentioning the obstacles to implementation. This is in order to avoid these obstacles or take corrective measures to avoid them. The obstacles to applying knowledge management are classified as mentioned by each of [12,18] is as follows:

1. **Organizational And Administrative Obstacles**, which are the obstacles associated with the organizational and administrative structure, including the control of culture that limits the sharing of knowledge, the need for a common language that unites all members of the organization, a focus on more explicit knowledge, lack of coordination between units and departments of the organization, and insufficient awareness of the concept Knowledge management, its role and importance, the lack of interest in knowledge management programs and the related training programs, the means for their application and the lack of support from the top leadership for them, insufficient time to learn how to use and apply these systems, loss of knowledge due to employee leaving or retirement, or even ignorance of individuals about what they have. Knowledge, their inability to acquire knowledge, the lack of integration between the organization's activities related to knowledge management and the promotion of organizational learning, the need for a better understanding of knowledge management initiatives properly due to ineffective and ineffective communications, and the promotion of knowledge management systems in an unrealistic manner with unrealistic capabilities and capabilities, The failure to allocate sufficient human and material resources for its success, in addition to the lack of measurable performance indicators.
2. **Technology Barriers**, so organizations must keep up with what is new in the world of technology and modern technology; Being a tool that helps facilitate the application of knowledge management, as well as the excessive use of technology is one of the most important technological obstacles.

#### **Second - Electronic Business**

E-business is defined as an application to support all activities and areas of work related to the use of ICTs; To enable the organization to improve relations at the internal and external levels, and to enable companies to link internal and external data processing systems in a more efficient and flexible manner; To provide the best services [19].

E-business technology is the method of doing business digitally, by automating processes with special software. To process data and information, to activate communications between all internal and external parties, and to achieve coordination and complementarity between them; To increase the speed of performance, through electronic networks and electronic workflow systems; To maintain business continuity, efficiently and effectively.

#### **Dimensions of E-Business Technology**

We conclude from the previous definitions related to the concept of electronic business, that it focused on several parts, namely, electronic information, electronic communications and electronic work flow, which are the main axes of the current study model, and this part talks about in detail.

1. **Electronic Information:** The extent of e-business use is influenced by the level, intensity and power of the use of information [38], so organizations are working on the correct employment of that information; In order to achieve the goals of the organization, and to apply them in a simple and at a low cost [11], the development of information technology and its ability to process data has led to the growth of electronic business and the spread of its applications very quickly [16]. Therefore, the concept of informatics appeared and it is intended to automatically process information, and all scientific and technical branches that work on data processing are related to it, for example, various computer applications, robots, medical devices, satellites, electronic business, and others [18].  
Electronic information is a product of what is done through the information technology infrastructure, where it manually or automatically collects, stores, and processes information, and then transfers it to the concerned parties [13]. Electronic networks can also be used to spread information and access data across organizational boundaries and administrative levels depending on the powers granted, and access to electronic information may be through distinct collaborative technologies, such as corporate intranets, for example, discussion forums, and shared data bases and repositories[13].  
Information technology is one of the most important pillars of the organization, and its absence negatively affects the activities of the organization and its competitive ranks, and this is due to the great quantum leap it has made in storing and processing data and information, as this technology is the main product of modern information systems, as it has contributed to the transition from rule systems Traditional data into knowledge base systems, which are the basic infrastructure for various information systems, and have also contributed to activating knowledge management processes [18].
2. **Electronic Communication:** Communication technology expresses the development in the methods and means of sending and receiving information and knowledge, across distant geographical borders, and this is what led to the emergence of so-called electronic communications [18], as it is done through a system used as a means of sending or receiving messages through computer communications. And networks [11].  
The concept of electronic communication has surpassed the traditional task of transmitting information, as electronic communications have become networks of computer-based sciences, as they provide information, data and knowledge with great speed and accuracy, in addition to their low cost [18].  
These communications take place through many applications, from simple means such as e-mail [14], and customer interaction centers [24] to more complex forms, when using local and internal networks, such as electronic management, And electronic resource planning systems, and electronic project planning systems [11], by means of economic information networks, and others, and among the most prominent modern technologies that have played a fundamental

role in the quality of the communication process, telephone services, and Internet services that have a great degree of speed, efficiency and accuracy. [18], and the evolution of electronic networks, which are the global network - the Internet, the intranet - the intranet, the local network - the extranet, in addition to the virtual networks [14]. As the use of computers became closely linked to electronic communication networks, so that it became difficult to distinguish between them, which contributes to increasing the utilization of information stored in central servers and databases [17].

Therefore, effective and frequent internal and external electronic communications contribute to managing relationships and activating communication between different parties [14]; Meron'o-Cerdan et al., 2008; [11], such as, the relationship between the company and its customers, and employee relations in the flow of The internal work of the company, the management relations with the employees, in addition to the company's relationship with its various partners and suppliers [18,19], thus, external electronic communications increase the opportunities for cooperation [14], and contribute to increasing the electronic exchange of data, As in electronic commerce [15], and thus contributed to solving many internal and external organizational communication problems in traditional business [11].

The advantages of electronic communication are clear, visible, and can be measured, the most important of which is increased output, reduced need for travel and mobility, shortened distances, reduced need for personal interviews due to the use of electronic conferences and seminars [7], and electronic communications reduced costs compared to traditional means [3], for example the cost of distributing hard copies for attaching a file to an email is much higher, and the speed of communication has also increased.

**Electronic Work Flow:** The concept of electronic workflow has become a more important terminology; It contributes to analyzing and managing the flow of information and extensive transactions at work [5], so e-business provides an opportunity to automate processes; Because electronic workflow is available as an e-business dimension, which involves the creation of electronic operations [88], in the beginnings simple workflow systems were made by adding routing mechanisms to define a chain of recipients for email systems, but The existence of information and communications technology has increased support for workflow systems and has become an integral part of them [6]. Work flow systems distribute tasks, roles and responsibilities by organizing, coordinating paper transactions and converting them into electronic parameters, based on specific foundations, in which powers are arranged so that the transaction electronically reaches the right person [5], and then monitors work on the progress of these transactions [2]. Workflow is viewed as the core integration technology, combining information to support it, and linked to a flexible and adaptive infrastructure [4,5], and electronic workflow systems provide flexibility for the operations and activities of the organization [6].

#### **The Importance of Electronic Business Technology**

E-business is one of the most important developments in the digital and business era [4]. It works to provide comfort to employees, and helps to reach all parts of the world through the Internet effectively, in addition to its ability to support and increase the effectiveness of business operations [16],

and its ability to reform and enhance original work procedures through modern technologies[9]. The importance of e-business also stems from its ability to solve problems and find alternatives in front of decision-makers in a timely manner address critical situations and overcome crises easily.

#### **Advantages of Applying E-Business Technology**

It is clear to researchers, through the importance of e-business, that there are several advantages enjoyed by e-business, as follows:

- Reducing Costs [3,4,6,10].
- Increasing Competitiveness [1,6].
- Improving Internal and External Communication [3,6,8].
- Increased Customer Loyalty [6,7]
- Regulating the Flow of Information and the Dissemination of Knowledge [6,8,12].
- Improving Transaction Content and Organizing Workflow [19,20].
- Expanding the Scope of Work Globally [12,14].
- Improving Organizational Performance, Increasing Efficiency, Providing Speed And Accuracy,[4,9].

#### **Motives for Applying E-Business Technology**

The interest in e-business technology is due to several reasons, the most important of which is the dependence of the rate of economic growth on the rate of technological development, the increasing interest in developing various devices and equipment, as well as the development of research, and the interest of organizations to verify the efficiency of local policies related to supporting technological development and benefiting from it. In giving this technology an advantage of dynamism and continuous development, and considering it as a means to achieve development [7].

#### **The Impact of Knowledge Management Success Factors on E-Business**

In activating the processes of generating and sharing knowledge, and caring about the knowledge of the meridian leads us to the necessity of the process of storing knowledge, as well as in terms of portability, it confirms the importance of the process of sharing knowledge, and as for the characteristic nature of knowledge, it calls us to give both the process of diagnosis, generation and sharing of knowledge a share of importance, as well as As for the instantaneous feature related to the generation of knowledge, finally the feature of innovation and continuity came to emphasize the role of the process of knowledge generation in creativity and innovation. Including a transition to the types of explicit and implicit knowledge, and being able to switch between these two types to apply knowledge management processes, for example, the process of formation contributes to the diagnosis, generation and sharing of knowledge, while the processes of inclusion and embodiment contribute to the activation of the storage, participation and application processes, as well as the process of empowerment has an important role in the process of sharing Knowledge, and the SECI model has the main role in connecting knowledge between individuals, the organization and the environment, and hence the success of knowledge management among all these circles, and finally comes the topic of knowledge sources; To identify and focus on the existence of knowledge; To use it optimally for the success of its management.

#### **Methodology and Procedures:**

**Society and Study Sample:** The study community includes all employees at different administrative levels in the Jordanian telecom companies in its main branches / Amman

Governorate, (Umniah, Orange, and Zain), which initiated the implementation of electronic business on the one hand, as well as the application of knowledge management on the other hand, and the number is three companies, and given The large size of the study population; A simple random sample was used; To choose the study sample, as the study questionnaire was distributed to the sample population, which numbered (240) questionnaires, through the Research and Development Department and the Human Resources Section in the companies under study. Where (191) questionnaires were retrieved, as some departments in telecommunications companies refused to fill the questionnaires submitted to them, the result (188) was a valid questionnaire for analysis, and (3) questionnaires were not valid for the analysis; For lack of completion, and with an actual response rate of (78.3%).

**Sources of Data Acquisition:** The study derives its information and data from two complementary sources; to achieve the study objectives, they are:

**Secondary Sources:** A number of books, references, research papers, publications, conference documents, master's and doctoral theses, and previous studies in Arab and foreign research literature related to the subject of the study were relied upon and covered the vocabulary of the theoretical side of the study.

**Primary Sources:** On the field side of the study, the questionnaire, which was developed and judged, was used as a main tool in collecting data from the study sample.

**Study Tool:** This study relied on the questionnaire as a tool to collect data. The study tool (questionnaire) in its final form included the objectives of the study, and some instructions for the study sample on how to fill in the questionnaire. In addition to the introduction, the tool includes three parts:

The First Part: This part is devoted to collecting information related to the demographic factors of employees, and it

includes (gender, age, educational level, years of experience, job position).

**The Second Part:** It contains (26) paragraphs, devoted to measuring the success factors of knowledge management in Jordanian telecommunications companies, where the paragraphs of the questionnaire regarding the study variables were developed based on previous studies, and in front of each paragraph five options, according to the five-dimensional Likert scale, and this scale includes the five dimensions next:

**Organizational Culture:** It was measured in seven items, which are (1-7).

**Administrative Leadership:** It was measured by five items, which are (8-12).

**Organizational Structure:** It was measured by six paragraphs (13-18).

**Information Technology Infrastructure:** It was measured in three paragraphs, which are (19-21).

**Scales:** It was measured in five paragraphs, namely (22-26).

**The Third Part:** It consists of (14) paragraphs, devoted to measuring electronic business, and in front of each paragraph there are five options, according to the five-year Likert scale, and these paragraphs were based on the scale used by the study of [31], and this scale It includes the following dimensions:

**Electronic Information:** It was measured by five paragraphs, which are (27-31).

**Electronic Communications:** It was measured by five paragraphs, which are (32-36).

**Electronic Work Flow:** It was measured in four paragraphs, which are (37-40).

Using the five-point Likert scale, where the number (1) begins to express the degree of strong disapproval, and reaches the number (5), which represents the high degree of approval, as in the following table.

**Table 1:** Likert scale

Five- Point Likert Scale	Strongly Agree	Agree	Nutral	Not Agree	Strongly Disagree
Relative weight	5	4	3	2	1

**Test of Validity and Reliability of the Study Tool**

The validity of the study tool used in the measurement refers to the extent of its ability to actually measure the concepts, the variables to be measured and research their impact (Sekaran, 2003).

**First: Outward Honesty** and it refers to the extent to which the paragraphs contained in the study tool reflect the research variables accurately and with the least possible degree of variation. Therefore, the researchers constructed the questionnaire's vocabulary by relying on the vocabulary of previous studies that were proven to be reliable and reliable. To test the apparent validity of the study, the researchers presented the study tool in its initial form to a group of referees and specialists, and the wording of a number of paragraphs has been modified according to these observations.

**Authenticity Of The Content:** the validity of the content refers to the ability of the study tool to measure what the researcher wants to measure, and it means the extent to which the statements and paragraphs of the questionnaire represent all the dimensions of the variables and their various characteristics, and this mainly depends on the procedures that the researcher followed in developing the questionnaire,

**Table 2:** Cronbach  $\alpha$ -scaling factor for the study areas

#	Knowledge Management Success Factors	Number Of Paragraphs	Cronbach Alpha Coefficient
1.	Organizational culture	7	0.881
2.	Administrative leadership	5	0.850
3.	Organizational Chart	6	0.850

and the definition of the study variables in accordance with the objectives of Study, and to achieve this, a comprehensive survey was conducted for Arab and foreign studies that dealt with the success factors of knowledge management and e-business, with the aim of identifying the measurement methods used and procedural definitions.

**Second: The Stability of the Study Tool**

The stability of the study tool was confirmed with respect to the variables of the success factors of knowledge management and electronic business by calculating the value of the coefficient of the alpha (Cronbach's coefficient Alpha), which measures the internal consistency of the paragraphs of the questionnaire, and this means the strength of the link and cohesion between the paragraphs of the scale. Although there are no standard rules for appropriate alpha values, an alpha value greater or equal to 0.60 is acceptable in research related to the administrative and human sciences (Sekaran, 2003). The closer the value to (1 i.e. 100%), this indicates higher degrees of stability for the study tool, and the following table shows the coefficient of stability of the internal consistency of the questionnaire dimensions (Cronbach's Alpha scale).

4.	IT infrastructure	3	0.884
5.	Knowledge measures	5	0.806
<b>Grand total</b>		26	0.956
<b>#</b>	<b>Electronic Business</b>	<b>Number Of Paragraphs</b>	<b>Cronbach Alpha Coefficient</b>
1.	Electronic information	5	0.887
2.	Electronic communication	5	0.896
3.	Electronic work flow	4	0.828
<b>Grand total</b>		14	0.946

The results indicated that the measure of knowledge management success factors is characterized by a high degree of stability, amounting to (0.956), and the results presented in the previous table indicated that all variables of knowledge management success factors, organizational culture (0.881), administrative leadership (0.850), and organizational structure (0.850), IT infrastructure (0.884), and knowledge measures (0.806), all of which have high degrees of stability. The table also shows that the electronic business scale is characterized by a high degree of stability, with the value of Cronbach Alpha (0.946), and that all electronic business dimensions, electronic information (0.887), electronic communication (0.896), and electronic work flow (0.828), all have a degree of High stability.

**Statistical Methods Used**

The data collected by questionnaire were processed using the Statistical Software Package for Social Sciences (SPSS), and included the following statistical methods:

- Descriptive Statistic Measure: These are represented by Frequencies and Descriptive. To reveal percentages, mean, and standard deviation, and to describe study variables and characteristics of the study sample.
- The coefficient of stability of the study instrument (Cronbach's coefficient Alpha); to test the stability of the study tool.
- Regression and Multiple Linear Regression to measure the effect of the independent variable on the dependent variable.
- Importance level: The importance level for each paragraph appears according to the values mentioned in the following table:

**Table 3:** Level of significance

SMA	Level Of Importance
From 1- less than 2.33	Low
2.33 - less than 3.66	Medium
From 3.67 and above	High

**Study Procedures:** The study population was identified, a random sample was selected, the study literature was reviewed, the study tool was developed, then the researchers made field visits to Jordanian telecommunications companies at their headquarters in the capital Amman, and the questionnaires were distributed and received personally by the managers of the human resources department, after The data were entered, and statistically processed by computer by SPSS program, and then the data were analyzed, results extracted, discussed, and recommendations written.

**Describe the Characteristics of the Study Sample**

The results of the demographic variables of the study sample, which included (gender, age, educational level, years of experience, job position) were presented and analyzed in the following table.

The following table shows the distribution of the study sample according to the gender variable, as we note that the number of males reached (97) participants with (51.6%) of the total sample, and this percentage is higher than the percentage of female participants, as their number reached (91) participants with (48.4) % of the total sample. This representation of males and females makes sense. Given the high participation of males in the labor market compared to females in Jordan.

**Table 4:** Distribution of study sample individuals according to demographic variables

Variables	Category	The Number	The Ratio %	Total Summation
Kind of social	Male	97	51.6	188
	Female	91	48.4	
Age	Less Than 25 Years Old	55	29.3	
	25- Less Than 36 Years Old	109	58	
	36 - Less Than 46 Years Old	23	12.2	
	46 Years And Over	1	00.5	
Qualified scientific	Intermediate Diploma Or Below	4	2.1	
	Bachelor	150	79.8	
	Postgraduate	34	18.1	
Years of Experience	Less Than 5 Years	84	44.7	
	Less Than 10 Years	73	38.8	
	10 Years Or More	31	16.5	
Career Center	Director / Assistant Director	12	6.4	
	Head Of The Department	15th	8	
	Subordinate (No Supervisory Duties )	161	85.6	

- The previous table shows the distribution of the study sample according to the age variable, so that the largest participation was for the age group (25 - less than 36 years), as the number of participating employees from this category was (109) participants, with a percentage (58%), followed by the age group (less From 25 years old), as the number of participating employees from this

category reached (55) participants, with a percentage that formed (29.3%) of the total number of participants in the study sample, and for the age group (36 - less than 46 years), the number of participants in it reached (23) (12.2%), and the lowest participation was for the age group (46 years and over), as the number of participants was (1) one participant, and at a rate of (0.05%) of the

- total number of total participants in the study sample. The reason for the high percentage of the age group (25 - less than 36 years) may be due to the nature of the Jordanian society, which is characterized by youth.
- The previous table shows the distribution of the study sample according to the educational level variable, as we note that the largest percentage was those with a (bachelor's) degree, as their number reached (150), with a percentage (79.8%), followed by the educational level (postgraduate studies). The number of participants reached (34), which constituted (12.1%). As for the participants who hold a certificate (intermediate diploma or below), their number reached (4), at a rate of (2.1%). The reason may be due to the high percentage of respondents with a bachelor's degree in Working in Jordanian telecom companies means that this sector depends on the first university degree to meet the business requirements.
- The previous table shows the distribution of the study sample according to the years of experience variable, as we note that the number of participants whose term of employment in the bank (less than 10 years) is (73) participants, at a rate of (38.8%). The bank (10 years or more) is (31) participants, at a rate of (16.5%), and the largest percentage was for the participants whose tenure of work is (less than 5 years), and their number is (84) participants, at a rate of (44.7%). that; To the growth of the telecommunications sector and the introduction of technology, and to attract university graduates with young ages and experiences, holders of relevant degrees.

- The previous table shows the distribution of the study sample according to the job position variable, as the number of responding participants who occupy the job position (manager / assistant manager) reached (12) participants with a rate of (6.4%), which is the lowest percentage, while the respondent participants who occupy a job position ( Section head), their number reached (15) participants, at a rate of (8%), while the number of participants in the position (subordinate (without supervisory duties)) was (161) participants with a rate of (85.6%), which formed the largest percentage. This interpretation is considered normal; because the number of subordinates in any organization is greater than the number of managers and department heads.

**Description of the Study Variables**

To describe the level and importance of the success factors of knowledge management (organizational culture, managerial leadership, organizational structure, information technology infrastructure, standards), and the level and importance of electronic business (electronic information, electronic communication, electronic work flow) in Jordanian telecommunications companies, researchers have resorted to using The mean, standard deviations, and level of significance, as shown in the following tables:

**First:** The arithmetic means, standard deviations, and the level of importance of the study sample's response to the success factors of knowledge management.

**The Arithmetic Mean, Standard Deviation, and Level Of Significance of the Sample Respondents' Response to the Organizational Culture Variable**

**Table 5:** averages and standard deviations and the level of importance to the sample response to variable organizational culture

#	The Paragraphs	The Number	SMA	Standard Deviation	The Order Of Importance Of The Paragraph	Level Of Importance
1.	The company formulates its goals according to its vision.	188	4.27	0.626	1	High
2.	The company is keen to develop a philosophy of teamwork.		3.93	0.908	3	
3.	The company works on exchanging ideas among all its employees.		3.97	0.814	2	
4.	The company works to enhance confidence among employees.		3.74	0.969	4	
5.	The company is keen on the commitment of all employees to its common values.		3.70	0.980	5	
6.	The company motivates employees who are creative with new ideas for business.		3.60	1.117	6	Medium
7.	The company acknowledges mistakes when they occur and works to correct them.		3.28	1.045	7	
<b>Organizational culture variable - macro</b>			3.78	0.714	High	

The previous table shows the arithmetic averages and standard deviations of the organizational culture, as it becomes clear that the arithmetic averages of the paragraphs related to the organizational culture ranged between (4.27-3.28), as the highest arithmetic average was for paragraph (1) "The company formulates its goals according to its vision" with an arithmetic average (4.27) and a standard deviation (0.626), followed by paragraphs (3) "The company works on exchanging ideas among all its employees" with an arithmetic average (3.97) and a standard deviation (0.814), and paragraph (2) "The company is keen to develop a philosophy of teamwork. With an arithmetic average (3.93) and a standard deviation (0.908), and then paragraph (4), the company works to enhance confidence among employees, with an arithmetic average (3.74) and a standard deviation (0.969), and paragraph (5). Employees with their common values "with an arithmetic average (3.70) and a standard

deviation (0.980), and all the previous paragraphs came with a high level of importance. Paragraph (6)" The Company motivates employees who innovate in proposing new ideas for work "with an arithmetic average (3.60) and a standard deviation (1.045), and finally paragraph (7) "The company admits mistakes when they occur and it works to correct it "with the lowest arithmetic mean of (3.28) and a standard deviation (1.117), and both paragraphs came with the level of medium importance.

We note from the previous table that the general average of the responses of the respondents to the variable of organizational culture reached (3.78) with a standard deviation (0.714), which is within the level of high importance. This indicates that the prevailing organizational culture in Jordanian telecommunications companies is characterized by modern management thinking, and is achieving success in knowledge management.

**The Arithmetic Mean, Standard Deviation, and Level Of Significance of the Sample Respondents' Response to the Administrative Leadership Variable.**

**Table 6:** The arithmetic averages, standard deviations, and the level of importance of the respondents of the sample to the variable of administrative leadership

#	The Paragraphs	The Number	SMA	Standard Deviation	The Order Of Importance Of The Paragraph	Level Of Importance
1.	The company's management is constantly developing the capabilities of employees.	188	3.65	1.046	2	Medium
2.	The company's management is considered a positive example for employees in objectivity, professionalism and specialization.		3.77	0.990	1	High
3.	The company's management is keen to involve employees in making decisions.		3.47	0.927	4	Medium
4.	The company's management delegates its powers to the employees according to the situation.		3.60	0.968	3	
5.	The company's management distributes incentives to employees fairly.		3.31	1.120	5	
<b>Administrative leadership variable - macro</b>			3.56	0.800	Medium	

The previous table shows the arithmetic averages and the standard deviations related to the administrative leadership. The values of the arithmetic averages ranged between (3.77-3.31), and came in first place in Paragraph (9) "The company's management is a positive example for employees in objectivity, professionalism and specialization" with an arithmetic average (3.77) and a deviation Standard (0.990) and the level of high importance, and the rest of the paragraphs related to administrative leadership came with a level of medium importance. Paragraph (8) "The company's management works to continuously develop the capabilities of employees" with an arithmetic average (3.65) and a standard deviation (1.046), followed by Paragraph (11) "The company's management delegates its powers to the employees according to the situation" with an arithmetic average (3.60) and a standard deviation (0.968), and then Paragraph (10) "The company's management is keen to involve employees in making decisions" with an arithmetic average (3.47) and a standard deviation (0.927) Finally, Paragraph (12) "The company's management distributes incentives to employees fairly," with an arithmetic average (3.31) and a standard deviation (1.120).

We note from the previous table that the general average of the responses of the sample members to the variable of administrative leadership was (3.56) and a standard deviation (0.800) within the level of medium importance. This means that there are medium levels of administrative leadership from the viewpoint of employees in Jordanian telecommunications companies, which indicates that the managerial leadership styles in the company contribute, on

average, to supporting the success of knowledge management. Therefore, companies must focus and raise awareness of the importance of knowledge management by departments, and support it throughout the company.

**The Arithmetic Mean, Standard Deviation, and Level Of Significance for Responding Sample Members to the Organizational Structure Variable.**

The arithmetic averages and standard deviations related to the organizational structure ranged between (3.91-2.78), as shown in the following table, where paragraph (16) "Organizational structure speeds up the process of exchanging information and communication" with an arithmetic mean (3.91) and a standard deviation (0.969) above The level of importance, followed by Paragraph (15) "The organizational structure facilitates cooperation between the employees of the company" with an arithmetic average (3.85) and a standard deviation (0.981), and then paragraph (18) "The organizational structure focuses on horizontal communications between employees" with an arithmetic average(3.71) and a standard deviation (1.020), and both the previous two paragraphs have a high level of importance, while paragraph (14) "The organizational structure of the company is clear" with an arithmetic average (3.57) and a standard deviation (0.976), and paragraph 17 "The organizational structure responds to environmental changes With an arithmetic mean (2.96) and a standard deviation (0.924), and Paragraph (13) "The company provides an organizational unit for knowledge management," with an arithmetic mean (2.78) and a standard deviation (1.086) with a level of medium importance.

**Table 7:** The arithmetic averages, standard deviations, and the level of significance of the sample members 'response to the organizational structure variable

#	The Paragraphs	The Number	SMA	Standard Deviation	The Order Of Importance Of The Paragraph	Level Of Importance
1.	The company provides an organizational unit for knowledge management.	188	2.78	1.086	6	Medium
2.	The organizational structure of the company is clear.		3.57	0.976	4	
3.	The organizational structure facilitates cooperation between company employees.		3.85	0.981	2	High
4.	The organizational structure speeds up the process of information exchange and communication.		3.91	0.969	1	
5.	The organizational structure responds to environmental changes.		2.96	0.924	5	Medium



6.	The organizational structure focuses on the horizontal communication between the two employees.		3.71	1.020	3	High
Variable Organizational Structure - Macro			3.46	0.751	Medium	

We note from the previous table that the general average of the responses of the sample members to the variable of the organizational structure reached (3.46) and a standard deviation (0.751), which is within the level of medium importance. This means that the organizational structure applied in the companies under study is acceptable as a

contributing factor to the success of knowledge management, but companies should develop more modern and appropriate organizational structures for knowledge management.

**The Mean, Standard Deviation, and Level Of Significance of the Sample Respondents' Response to the IT Infrastructure Variable.**

**Table 8:** The arithmetic averages, standard deviations, and the level of significance of the sample respondents' response to the IT infrastructure variable

#	The Paragraphs	The Number	SMA	Standard Deviation	The Order Of Importance Of The Paragraph	Level Of Importance
1.	The company updates its computers frequently.	188	3.70	1.155	2	High
2.	The company is keen to continuously develop its software.		3.70	1.069	2	
3.	The company provides the most recent databases of its activities.		3.77	0.997	1	
<b>IT Infrastructure Variable - Total</b>			3.72	0.969	High	

The previous table shows the arithmetic averages and standard deviations of the IT infrastructure, and they ranged between (3.77-3.70), where paragraph (21) "the company provides the latest databases for its activities" got the highest rank with an arithmetic average (3.77) and a standard deviation (0.997). ) And the level of high importance, followed by paragraphs (19) and (20) "The company updates its computers constantly" and "The company is keen to continuously develop its software" with an arithmetic average (3.70) for both paragraphs and a standard deviation (1.155) and (1.069), respectively. The previous table shows that the general average of the respondents' responses to the IT infrastructure variable reached (3.72) and a standard deviation (0.969), and this is within the high importance level.

ranged between (3.93 - 3.45). Paragraph (22) Came, "The company is keen to evaluate employees' knowledge (for example with customers)"with the highest arithmetic mean of (3.93) and a standard deviation (0.830), followed in second place by Paragraph (23) "There is a continuous flow of new ideas in the company" with an arithmetic average (3.79) and a standard deviation (0.880), and Paragraph (26) "The company is keen to transfer new ideas and ways of working to all Employees also with an arithmetic mean (3.79) and a standard deviation (0.935), and then came in third place Paragraph 25. "Employees take it upon themselves to introduce continuous improvements to the company" with an arithmetic average (3.76) and a standard deviation (1.075) with a high level of importance, while Paragraph (24) "The company provides continuous training for the development of employees" came with a level of medium importance, as its arithmetic mean (3.45) and its standard deviation reached.(1.106)

**The Arithmetic Mean, Standard Deviation, and Level Of Significance of the Sample's Response to the Measures Variable**

The following table shows the arithmetic averages and standard deviations for measures of knowledge, and they

**Table 9:** The arithmetic means, standard deviations, and the level of significance of the respondents of the sample to the measures variable

#	The Paragraphs	The Number	SMA	Standard Deviation	The Order Of Importance Of The Paragraph	Level Of Importance
1.	The company is keen to evaluate the employees' knowledge (for example, with customers).	188	3.93	0.830	1	High
2.	There is a constant flow of new ideas in the company.		3.79	0.880	2	
3.	The company provides continuous training to develop employees.		3.45	1.106	4	Medium
4.	The employees take it upon themselves to make continuous improvements to the company.		3.76	1.075	3	High
5.	The company is keen to transfer new ideas and methods of work to all employees.		3.79	0.935	2	
<b>Scale variable - overall</b>			3.74	0.729	High	

We note from the previous that the general average of the responses of the sample members on the variable of measures reached (3.74) with a standard deviation of (0.729), and this is within the high importance level. This indicates that the Jordanian telecom companies are concerned with measuring the knowledge of their employees, and are working to evaluate it continuously.

**The Arithmetic Mean, Standard Deviation, and Level Of Significance of the Sample Members' Response to the Electronic Information Variable.**

**Second:** The arithmetic means, standard deviations, and the level of importance of the study sample's response to electronic business variables.

The following table shows the arithmetic averages and standard deviations of electronic information, ranging between (4.12-3.94), and paragraph (27) "The company handles computer data first-hand continuously" has the highest arithmetic mean (4.12) and a standard deviation (0.876), followed by the paragraph. (31) "Business technology provides information to end-users" with an

arithmetic mean (3.98) and a standard deviation (0.951), and then paragraph (28) “The use of technology contributes to transforming data into information related to different activities” with an arithmetic average (3.97) and a standard deviation (0.898), and paragraphs (29) And (30) came with an average of (3.94), “The Company is keen to process

information continuously,” and “The Company obtains knowledge through the data and information processed” and with a standard deviation (1.058) and (0.938), respectively. And all the electronic information paragraphs were of high importance.

**Table 10:** The arithmetic means, standard deviations, and the level of significance of the respondents of the sample to the electronic information variable

#	The Paragraphs	The Number	SMA	Standard Deviation	The Order Of Importance Of The Paragraph	Level Of Importance
1.	The company is constantly processing computer data.	188	4.12	0.876	1	High
2.	The use of technology transforms data into information related to various activities.		3.97	0.898	3	
3.	The company is keen to process information constantly.		3.94	1.058	4	
4.	The company obtains knowledge through processed data and information.		3.94	0.938	4	
5.	Business technology provides information to end users.		3.98	0.951	2	
<b>Electronic information variable - total</b>			3.99	0.785	High	

We note from the previous table that the general average in the responses of the study sample for the electronic information variable reached (3.99) and a standard deviation (0.785), within the level of high importance. This indicates that the Jordanian telecommunications companies are working on computerizing information and knowledge,

working on constantly processing it, and using the appropriate technology for that.

**The Arithmetic Mean, Standard Deviation, and Level Of Significance of the Sample Respondents' Response to the Electronic Communication Variable.**

**Table 11:** The arithmetic averages, standard deviations, and the level of significance of the respondents' response to the electronic communication variable

#	The Paragraphs	The Number	SMA	Standard Deviation	The Order Of Importance Of The Paragraph	Level Of Importance
1.	The company provides internet for all employees.	188	4.28	0.931	1	High
2.	The company is dedicated to using modern communication technology.		3.87	1.059	5	
3.	The communication technology used increases the speed of performance in the company.		4.00	0.948	4	
4.	Communication technology contributes to increasing coordination between the company and all other parties dealing with it (customers, for example.(		4.02	0.970	3	
5.	Communication technology facilitates integration between the various departments in the company.		4.14	0.831	2	
<b>Electronic Communication Variable - Total</b>			4.06	0.799	High	

The previous table shows the arithmetic averages and standard deviations of electronic communications. The values of the averages ranged between (4.28-3.87). Paragraph (32) “The company provides the Internet to all employees” came in the first place with the highest arithmetic mean of (4.28) and a standard deviation. (0.931) followed by Paragraph (36) “Communications technology facilitates integration between the various divisions in the company” with an arithmetic mean (4.14) and a standard deviation (0.831), and then came Paragraph (35) “Communication technology contributes to increasing coordination between the company and all The other parties dealing with it (customers, for example) with “an arithmetic mean (4.02) and a standard deviation (0.970), followed by paragraph (34)” “The communication technology used increases the speed of performance in the company” with an arithmetic average (4.00) and a standard deviation (0.948),

and finally Paragraph (33), “The company devotes its efforts to using modern communication technology,” came with an average (3.87) and a standard deviation (1.059). All electronic communication items came with a high level of importance.

We note from the previous table that the general average of the study sample responses to the electronic communication variable reached (4.06) with a standard deviation (0.799) with a high level of importance. This indicates that the application of electronic communications in all directions between employees and the various parties and departments is highly activated in Jordanian telecommunications companies, which contributes to increasing the efficiency and effectiveness of work in the company.

**The Arithmetic Mean, Standard Deviation, and Level Of Significance of the Sample Respondents' Response to the Electronic Work Flow Variable.**

**Table 12:** The arithmetic averages, standard deviations, and the level of significance of the sample respondents' response to the electronic work flow variable

#	The Paragraphs	The Number	SMA	Standard Deviation	The Order Of Importance Of The Paragraph	Level Of Importance
1.	The use of business technology in the company facilitates the flow of business models and procedures.	188	4.09	0.876	2	High
2.	The business technology used provides a clear picture of the flow of work in projects and organizational units.		3.76	0.886	4	
3.	Business technology contributes to the continuity of the flow of work within the company.		4.05	0.857	3	
4.	Technology facilitates business process of customer service.		4.25	0.951	1	
<b>Electronic workflow variable - total</b>			4.04	0.726	High	

The previous table shows the arithmetic averages and standard deviations of the electronic work flow. The values of the averages ranged between (4.25-3.76). Paragraph (40) "Business technology facilitates the customer service process" came with the highest arithmetic mean of (4.25) and a standard deviation (0.951). Followed by Paragraph (37) "The use of business technology in the company facilitates the flow of business models and procedures" with an arithmetic average (4.09) and a standard deviation (0.876), and then paragraph (39) "Business technology contributes to the continuity of the flow of work within the company with an average my arithmetic (4.05) and a standard deviation (0.857). Finally, paragraph (38) "The business technology used provides a clear picture about the flow of work in projects and organizational units" with the lowest arithmetic mean of (3.76) and a standard deviation (0.886), and all the previous paragraphs came Of high importance.

We note from the previous table that the general average of the responses of the study sample to the electronic work flow variable is (4.04) and a standard deviation (0.726) is within the high importance level. This means that the electronic systems specialized in regulating the flow of work are widely applied in Jordanian telecommunications companies, which

facilitates the flow of work procedures and regulates its flow. Thus serving employees and customers.

**The Arithmetic Means and Standard Deviations of the Responses of the Study Sample Individuals on the Success Factors of Knowledge Management**

The following table shows a summary of the arithmetic averages, standard deviations, and the level of importance of the success factors of knowledge management, as it is evident that each of the variables of organizational culture, information technology infrastructure and knowledge measures came within the level of high importance, and came in the level of medium importance of the variables of administrative leadership and the organizational structure. The success factors of knowledge management combined are considered within the level of medium importance with a total arithmetic mean (3.65) and a standard deviation (0.682), which means that the success factors of knowledge management occupy a good position in companies from the point of view of their employees, and this realization is acceptable for the application of knowledge management. Firms provide more attention and support to these factors; to contribute more to the application of knowledge management in the company.

**Table:13** The arithmetic averages and standard deviations of the study sample responses to the success factors of knowledge management

Rank	#	Knowledge Management Success Factors	Average Arithmetic	Standard Deviation	Level Of Importance
1	1.	Organizational culture	3.78	0.714	High
4	2.	Administrative leadership	3.56	0.800	Medium
5	3.	Organizational Chart	3.46	0.751	
3	4.	IT infrastructure	3.72	0.969	High
2	5.	Knowledge measures	3.74	0.729	
Macro			3.65	0.682	Medium

The following table shows a summary of the arithmetic averages and the total standard deviations of the electronic business variables represented by electronic information, electronic communications and electronic work flow, and the results indicate that all the variables came within the high

levels of importance, and therefore the overall importance level of the electronic business variable came within the high importance level, with an overall arithmetic average of (4.03) and a standard deviation (0.716), which means that electronic business in Jordanian telecom companies is widely applied.

**Table 14:** The arithmetic averages and standard deviations of the responses of the study sample individuals on the electronic business dimensions

Rank	#	Electronic Business	SMA	Standard Deviation	Level Of Importance
3	1.	Electronic information	3.99	0.785	High
1	2.	Electronic communication	4.06	0.799	
2	3.	Electronic work flow	4.04	0.726	
Macro			4.03	0.716	High

**Test Hypotheses of the Study**

- Simple regression analysis to test the relationship between knowledge management success factors

(organizational culture, managerial leadership, organizational structure, information technology infrastructure, metrics) in electronic information.

**Table15** Simple regression analysis to test the relationship between knowledge management success factors in electronic information

Correlation Coefficient R	The Coefficient Of Determination R <sup>2</sup>	Values F	Indication Level F	T Value	Indication Level T	Degrees Of Freedom Df
0.804	0.646	66.489	0.000	3.793	0.000	5.182

To test this hypothesis, a simple regression analysis was used, and the following table shows the results of testing the relationship between the independent variables (knowledge management success factors: organizational culture, managerial leadership, organizational structure, information technology infrastructure, and measures) combined and the dependent variable (electronic information). The variables (factors of success of knowledge management) explained together an amount (64.6%) of the variance in electronic information, and the correlation coefficient [R] reached (0.804), while the value of [F] reached (66.489) with a level of significance of (0.000). Also, the calculated value of [T] reached (3.793) at a level of significance of (0.000), which is less than the adopted level of significance ( $\alpha \leq 0.05$ ) for both values.

The foregoing indicates that both the value of [F] and [T] are statistically significant; accordingly, we accept the first main hypothesis which states “There is a statistically significant effect at the level of significance ( $\alpha \leq 0.05$ ) for the success factors of knowledge management in electronic information in Jordanian telecommunications companies”. This indicates that the success factors of knowledge management contribute well to activating electronic information.

- Multiple regression analysis to test the relationship between the success factors of knowledge management (organizational culture, managerial leadership, organizational structure, IT infrastructure, metrics) in electronic information.

**Table 16:** Multiple regression analysis to test the relationship between knowledge management success factors in electronic information

Dependent variable (electronic information)			
Independent variables	Beta ( $\beta$ )	T	Indication level T
Organizational culture	0.237	3.090	0.002
Administrative leadership	0.051	0.568	0.571
Organizational structure	0.138	1.847	0.066
IT infrastructure	0.396	5.091	0.000
Scales	0.087	0.936	0.350
<b>F = 66.489</b>			
<b>Sig. = 0.000</b>			

The previous table shows the results of multiple regression analysis to explain the effect of each of the knowledge management success factors separately on the electronic information variable. Significance = 0,002), which is less than the approved significance level (0.05); accordingly, we accept this part of the first main premise. This indicates that the good organizational culture of employees will contribute effectively to electronic information.

infrastructure variable, the results showed a statistically significant positive effect for this variable on the electronic information variable (= T 5.091 at significance level = 0,000), which is less than the approved level of significance (0.05). This implies acceptance of this part of the first major premise; and it indicates that the existence of a sophisticated information technology infrastructure enhances the company's employees' use of electronic information, and thus access to the application of knowledge management effectively.

The results also indicated that the electronic information variable is not affected positively and statistically by the extent of awareness of employees in Jordanian telecommunications companies of administrative leadership (= T = 0.568 at significance level = 0.571), which is higher than the approved level of significance (0.05). Accordingly, we reject this part of the first main hypothesis. This indicates that the administrative leadership does not affect the employees' use of electronic systems and their deal with electronic information specifically.

Finally, the results indicated that the electronic information variable is not affected positively and statistically by the extent of awareness of employees in Jordanian telecom companies of knowledge measures (= T = 0.936 at significance level = 0.350), which is higher than the approved level of significance (0.05). Accordingly, we reject this part of the first main hypothesis. This indicates that the use of knowledge metrics does not enhance the extent to which employees adopt the application of electronic information in the company they work for.

The results also showed that the electronic information variable is not positively and statistically affected by the extent of awareness of employees in Jordanian telecommunications companies of the nature of the company's organizational structure (= T = 1.847 at significance level = 0,066), which is higher than the approved level of significance (0.05). Accordingly, we reject this part of the first main hypothesis. This means that the nature of the applied organizational structures does not affect the employees' handling of electronic information.

The results presented in the previous table showed that the information technology infrastructure variable was the most influential in electronic information, where the value of [ $\beta$ ] increased by (0.396), and came in second place in the influence of organizational culture, where the value of [ $\beta$  = 0.237], while it did not affect Variables of administrative leadership, organizational structure and knowledge measures on electronic information.

As for the extent of awareness of employees in Jordanian telecom companies of the information technology

**The second main hypothesis:** There is a statistically significant effect at the level of significance ( $\alpha \leq 0.05$ ) for the

success factors of knowledge management in electronic communication in Jordanian telecommunications companies.

- Simple regression analysis to test the relationship between knowledge management success factors (organizational culture, managerial leadership,

organizational structure, IT infrastructure, metrics) in electronic communications.

**Table 17:** Simple regression analysis to test the relationship between knowledge management success factors in electronic communication

Correlation Coefficient R	The Coefficient Of Determination R <sup>2</sup>	Values F	Indication Level F	T Value	Indication Level T	Degrees Of Freedom Df
0.798	0.637	63.755	0.000	4.652	0.000	5.182

To test the second main hypothesis, a simple regression analysis was used, and Table (18) indicates the results of testing the relationship between independent variables (knowledge management success factors: organizational culture, managerial leadership, organizational structure, information technology infrastructure, and measures) combined and the dependent variable (communications e); Where the variables (knowledge management success factors) explained together an amount (63.7%) of the variance in electronic communications, and the correlation coefficient was [R = 0.798], while the value of [F] reached (63.755) with a significant level of (0.000), Also, the calculated value of [T] reached (4.652) at a level of significance of (0.000), which is less than the adopted level of significance ( $\alpha \leq 0.05$ ) for both values.

We conclude from the above that both the value of [F] and [T] are statistically significant; accordingly, we accept the second main hypothesis which states “There is a statistically significant effect at the level of significance ( $\alpha \leq 0.05$ ) for the success factors of knowledge management in the electronic communication dimension in Jordanian telecommunications companies”. This indicates that the success factors of

knowledge management contribute well to activating the application of electronic communications.

- Multiple regression analysis to test the relationship between the success factors of knowledge management (organizational culture, managerial leadership, organizational structure, IT infrastructure, metrics) in electronic communications.

The following table shows the results of multiple regression analysis to explain the effect of each of the knowledge management success factors separately on the electronic communication variable, as the results indicated that the electronic communication variable is positively and statistically influenced by the extent to which employees in Jordanian telecom companies perceive organizational culture (T = 2.788 at the level of Significance = 0,006), which is less than the approved significance level (0.05); Accordingly, we accept this part of the second main premise. This indicates that the good organizational culture of the employees will contribute effectively to electronic communication.

**Table 18:** multiple regression analysis to test the relationship between knowledge management success factors in electronic communication

Dependent Variable(Electronic Communication)			
Independent variables	Beta ( $\beta$ )	T	Indication level T
Organizational culture	0.217	2.788	0.006
Administrative leadership	0.111	1.212	0.227
Organizational structure	0.216	2.858	0.005
IT infrastructure	0.524	6.639	0.000
Scales	0.036	0.381	0.704
<b>F = 63.755</b>			
<b>Sig. = 0.000</b>			

The results also showed that the electronic communication variable is not affected positively and statistically by the extent of awareness of employees in Jordanian telecommunications companies of administrative leadership (= T = 1.212 at the significance level = 0.227), which is higher than the level of significance adopted (0.05). Accordingly, we reject this part of the second main hypothesis. The employees' perception of the importance of electronic communications does not change according to the prevailing administrative leadership pattern in Jordanian telecommunications companies.

The results also indicated that the electronic communication variable is not affected positively and statistically by the extent of awareness of employees in Jordanian telecom companies of knowledge measures (= T0.381 at significance level = 0.704), which is higher than the approved level of significance (0.05). Accordingly, we reject this part of the second main hypothesis. Whereas the results showed that the electronic communication variable is positively and

statistically affected by the extent of awareness of employees in Jordanian telecom companies of the organizational structure variable (= T2.858 at significance level = 0.005), which is less than the approved level of significance (0.05). Accordingly, we accept this part of the second main premise. This indicates that the applied structures are acceptable in terms of their ability to activate individual communication with each other in Jordanian telecommunications companies, and that the company should adopt more flexible and flatter structures; To enhance the application of electronic communications.

The results also showed that the electronic communication variable is affected positively and statistically by the extent of awareness of employees in Jordanian telecommunications companies of the information technology infrastructure variable, as the results showed an effect at (T = 6.639 and the significance level = 0,000), which is less than the approved level of significance (0.05) ; This implies acceptance of this part of the second major premise; And it indicates that the

existence of a sophisticated information technology infrastructure enhances the company's employees' use of electronic communications, which leads to the rapid transfer of knowledge.

The previous table indicates that the information technology infrastructure variable ranked first in affecting electronic communications, where the value of  $[\beta]$  increased by (0.524), and came second in the influence of organizational culture, where the value was  $[= 0.217]$ , followed by the organizational structure variable. Which was influencing the third place by  $[\beta = 0.216]$ , while the two variables of administrative leadership and knowledge measures did not affect electronic communications.

**The third main hypothesis:** There is a statistically significant effect at the level of significance ( $\alpha \leq 0.05$ ) for the success factors of knowledge management in the electronic work flow in Jordanian telecommunications companies.

- Simple regression analysis to test the relationship between knowledge management success factors (organizational culture, managerial leadership,

**Table 19** :simple regression analysis to test the relationship between knowledge management success factors in electronic workflow

Correlation Coefficient R	The Coefficient Of Determination R <sup>2</sup>	Values F	Indication Level F	T Value	Indication Level T	Degrees Of Freedom Df
0.747	0.558	45.956	0.000	6.041	0.000	5.182

We can deduce from the above that both the value of  $[F]$  and  $[T]$  are statistically significant; Accordingly, we accept the third main hypothesis, which states “There is a statistically significant effect at a significant level ( $\alpha \leq 0.05$ ) for knowledge management success factors in the electronic work flow dimension in Jordanian telecommunications companies”; This indicates that the success factors of

**Table20** : Multiple regression analysis to test the relationship between knowledge management success factors in electronic workflow

Dependent Variable (Electronic Work Flow)			
Independent variables	Beta ( $\beta$ )	T	Indication level T
Organizational culture	0.286	3.338	0.001
Administrative leadership	0.227	2.260	0.025
Organizational structure	0.345	4.137	0.000
IT infrastructure	0.369	4.237	0.000
Scales	0.055	0.530	0.597
		<b>F = 45.956</b>	
		<b>Sig. = 0.000</b>	

The previous table refers to the results of multiple regression analysis to explain the effect of each of the success factors of knowledge management separately on the electronic work flow variable, as the results indicated that the electronic work flow variable is positively and statistically influenced by the extent of employees in Jordanian telecom companies' awareness of organizational culture (= T 3.338 at significance level = 0.001), which is lower than the approved level of significance (0.05); Accordingly, we accept this part of the third main premise: This indicates that the good organizational culture of the employees will contribute effectively to the electronic work flow.

The results also indicated that the electronic work flow variable is positively and statistically influenced by the extent of employees in Jordanian telecom companies' awareness of administrative leadership (= T2.260 at significance level = 0.025), which is less than the approved level of significance (0.05). Accordingly, we accept this part of the third main premise: This indicates that the applied managerial leadership patterns affect the extent to which employees use electronic work flow systems, and therefore

organizational structure, IT infrastructure, metrics) in electronic work flow.

To test the last main hypothesis, a simple regression analysis was used, and the following table indicates the results of testing the relationship between the independent variables (knowledge management success factors: organizational culture, managerial leadership, organizational structure, information technology infrastructure, metrics) combined and the dependent variable (electronic work flow); Where the variables (knowledge management success factors) explained together an amount (55.8%) of the variance in the electronic work flow, and the correlation coefficient was  $[R = 0.747]$ , while the value of  $[F]$  reached (45.956) with a significant level of (0.000) Also, the calculated value of  $[T]$  reached (6.041) at a level of significance of (0.000), which is less than the adopted level of significance ( $\alpha \leq 0.05$ ) for both values.

knowledge management contribute well to activating the application of electronic work flow.

- Multiple regression analysis to test the relationship between the success factors of knowledge management (organizational culture, managerial leadership, organizational structure, IT infrastructure, metrics) in electronic work flow.

companies must enhance these patterns in order to get the most benefit from electronic work flow systems.

The results also showed that the electronic work flow variable is positively and statistically affected by the extent of awareness of employees in Jordanian telecommunications companies of the nature of the company's organizational structure (= T = 4.137 at the significance level = 0,000), which is less than the approved level of significance (0.05). Accordingly, we accept this part of the third main premise: This means that the employees' application of electronic work flow systems varies according to the nature of the applied organizational structure of the company, so companies must adopt modern organizational structures such as network structures.

As for the extent of awareness of employees in Jordanian telecommunications companies of the information technology infrastructure variable, the results showed a statistically significant positive effect for this variable on the electronic work flow variable (T = 4.237 at significance level = 0,000), which is less than the approved level of significance (0.05). This implies acceptance of this part of

the third major premise; and it indicates that the existence of a sophisticated information technology infrastructure enhances the company's employees' use of electronic flow systems.

Finally, the results indicated that the electronic work flow variable is not affected positively and statistically by the extent of employees in Jordanian telecom companies' awareness of knowledge measures (= T = 0.530 at significance level = 0.597), which is higher than the approved level of significance (0.05). Accordingly, we reject this part of the third main hypothesis. This indicates that the use of knowledge metrics does not enhance the extent of employee adoption of implementing electronic workflow systems in the company they work for.

**Table 21:** simple regression analysis to test the relationship between knowledge management success factors in e-business

Correlation Coefficient R	The Coefficient Of Determination R <sup>2</sup>	Values F	Indication Level F	T Value	Indication Level T	Degrees Of Freedom Df
0.810	0.657	356.102	0.000	5.498	0.000	1.186

The previous table indicates the results of testing the relationship between the independent variable (knowledge management success factors) and the dependent variable (e-business). Where the variable of knowledge management success factors explained an amount (65.7%) of the variance in electronic business, and the correlation coefficient reached [R = 0.810], while the value of [F] reached (356.102) with a significant level of (0.000). The value of [T] computed (5.498) at a level of significance of (0.000), which is less than the adopted level of significance ( $\alpha \leq 0.05$ ) for both values.

**Table 22:** Levels of influence on dependent variables

The Premise	First	The Second	The Third
Rank	Electronic Information	Electronic Communication	Electronic Work Flow
1.	IT infrastructure	IT infrastructure	IT infrastructure
2.	Organizational culture	Organizational culture	Organizational Chart
3.	Organizational Chart	Organizational Chart	Organizational culture
4.	Administrative leadership	Administrative leadership	Administrative leadership
5.	Knowledge measures	Knowledge measures	Knowledge measures

The following table represents a summary of the hypotheses and the results of the statistical analysis to test them, and the

The results in the previous table showed that the information technology infrastructure variable was the most influential in the electronic work flow, where the value of [ $\beta$ ] increased by (0.369), and came second in the impact of the organizational structure, where the value was [ $\beta = 0.345$ ], and culture occupied The organizational leadership ranked third, and the value of [ $\beta$ ] was (0.286). The administrative leadership variable came in fourth place and the value of [ $\beta = 0.227$ ], while there was no effect of knowledge measures in the flow of electronic work.

- Simple regression analysis to test the relationship between the success factors of knowledge management in e-business.

We conclude from the above that both the value of [F] and [T] are statistically significant; this indicates that knowledge management success factors are well applied to e-business. The following table shows a summary of the levels of influence of the independent variables (organizational culture, managerial leadership, organizational structure, IT infrastructure, knowledge measures) on the dependent variables (electronic information, electronic communication, and electronic work flow) in descending order.

decision based on them, and this reveals what is meant by this study.

**Table 23:** The decision to accept or reject the hypotheses

The Premise	Text	The Decision	Rejection Levels
The First	There is a statistically significant effect at the level of significance ( $\alpha \leq 0.05$ ) for the success factors of knowledge management in electronic information in Jordanian telecommunications companies.	Partial acceptance of alternative	- Leadership Management -Organizational Structure -knowledge standards
The Second	There is a statistically significant effect at the level of significance ( $\alpha \leq 0.05$ ) for the success factors of knowledge management in electronic communication in Jordanian telecommunications companies.	Partial acceptance of alternative	-Leadership Management -knowledge standards
The Third	There is a statistically significant effect at the level of significance ( $\alpha \leq 0.05$ ) for the success factors of knowledge management in the electronic work flow in Jordanian telecommunications companies.	Partial acceptance of alternative	-standards of knowledge

### 8. Results

The following Results and recommendations were reached:

1. The results showed that there is an awareness of the factors of success in knowledge management represented by (organizational culture, administrative leadership, organizational structure, information technology infrastructure, metrics) among employees in

Jordanian telecommunications companies, as the arithmetic averages came in the current study of variables of organizational culture, information technology infrastructure and measures Knowledge within the level of high importance, as for the variables of administrative leadership and the organizational structure, they came within the level of medium importance in the current study, and this is consistent with the study of [13, 18].

2. The results showed that the electronic business represented by (electronic information, electronic communications, electronic work flow) applied in Jordanian telecommunications companies was high. All the electronic business averages in the current study came within the level of high importance.
3. The results indicated a positive impact of the success factors of knowledge management on e-business in Jordanian telecom companies. Where the knowledge management success factors variable explained (65.7%) of the variance in e-business, and this result is consistent with the study [11].
4. The results indicated that the information technology infrastructure variable was the most influential in electronic information, and came in second place in the influence of organizational culture, while the variables of administrative leadership, organizational structure and knowledge measures did not affect electronic information.
5. The results of the study showed that the information technology infrastructure variable ranked first in influencing electronic communications, followed by the organizational culture variable, followed by the organizational structure variable, which influenced the third place, while the administrative leadership and knowledge measures did not affect electronic communication.
6. The results showed that the information technology infrastructure variable was the most influential in the electronic work flow, and it came in second place in the influence of the organizational structure, and the organizational culture ranked third, and this came in fourth place, the administrative leadership variable, while the electronic work flow variable was not affected by knowledge measures.
7. In terms of the partial impact on the dependent factors (different according to each study), the results were as follows:
  - The present study agreed with the results of the study of [11,13,21,24] regarding the effect of the organizational culture variable on the dependent variable in terms of Positivity, and differed with a study[13].
  - The study agreed with the results of the study of [21,17] in the variable of administrative leadership, and it disagreed with [11,17], where the results of their study came in a low degree.
  - The results of this study are in agreement with the results of studies [21] in the variable of the organizational structure, and with the studies of [13,17,18] in the IT infrastructure variable.
  - The results of the current study differed with the studies of [14, 16,11,17], with their results related to the variable of knowledge measures, as the current study showed that the variable of measures The knowledge is not statistically significant, while their results came in the presence of a positive statistical relationship.

## 9. Conclusions

Based on the results of the study, the researchers concluded with a set of conclusions:

- Jordanian telecom companies have a high-level organizational culture, whereby the company is keen to develop a philosophy of teamwork, encourage the exchange of ideas between employees, and generate

creative ideas, as it was evident through the study tool that companies adopt a culture of recognizing mistakes and working to correct them. Jordanian telecom companies pay attention to recruiting administrative competencies capable of leading effectively, representing a positive example for others, by delegating powers and involving employees in decision-making, as well as working to achieve the principle of justice.

- The organizational structures adopted by Jordanian telecom companies accelerate the process of communication and information exchange; which leads to activating knowledge management processes.
- Jordanian telecom companies lack a specialized administrative unit that successfully manages knowledge management processes, and the organizational structures adopted by telecommunications companies are static and are not adapted to environmental changes.
- Jordanian telecommunications companies adopt a modern and advanced technological infrastructure, including computers, specialized software, and modern and fast databases, and they are interested in developing them continuously, and this means that these companies are interested in the success of the knowledge management process.

## 10. Recommendations

Based on the findings and conclusions of the study, the researchers recommend:

1. The need to pay attention to the employees awareness of the importance of the success factors of knowledge management, given its impact on electronic business in Jordanian telecommunications companies, and because it is an economic resource, and this is achieved through:
  - Maintaining the level of organizational culture, and enhancing it continuously.
  - Raising the level of awareness of managers and decision-makers of the importance of the success factors of knowledge management and their impact on e-business. Cooperation and communication in order to achieve the desired goals.
  - The higher management of the company undertakes the enhancement and development of employees' capabilities, through moral and material incentives, by involving them in administrative tasks, by delegating powers and involving them in decision-making, which enhances their knowledge, and contributes to sharing knowledge and generating new ideas.
  - Establishing a special administrative unit concerned with knowledge management, organizing its operations, and checking the availability of success factors.
  - Adopting decentralized organizational structures, such as horizontal and network structures, easing class, and expanding the scope of powers, and that these structures work on generating, sharing and applying knowledge, as they must be able to interact with the external environment surrounding the company, and be dynamic, to meet cognitive challenges; To gain cognitive opportunities and avoid threats.
  - Strengthening the infrastructure of computers, and constantly updating software and databases.



- Ensuring that employees' knowledge is evaluated, providing training to them, in addition to enhancing their knowledge by ensuring the transfer of new knowledge and ideas to all employees.
2. The necessity of developing and enhancing electronic business in Jordanian telecom companies, given their role in reducing costs, increasing the competitive rank, and developing relationships and communications:
    - Educating employee's at all organizational levels of the importance of e-business.
    - Enhancing the level of adoption of knowledge management success factors in Jordanian telecommunications companies, as the results indicated that they have a significant impact on electronic business.
    - Processing data and information up-to-date, to obtain the required knowledge about the various activities, and employ them in a way that serves the business and achieves the company's goals.
    - Providing an internet network for all employees, and developing the communication network infrastructure, which works to accelerate work performance, and increase coordination and integration between the various organizational units, thus enhancing the effective and efficient achievement of goals.
    - Adopting modern work flow systems capable of facilitating work, controlling transactions, and accurately distributing powers, to increase work quality.

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