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## **THE EFFECT OF ELECTRONIC HUMAN RESOURCE MANAGEMENT PRACTICES IN ENHANCING THE ROLES OF KNOWLEDGE WORKERS: AN APPLIED STUDY AT THE HEADQUARTERS OF THE IRAQI MINISTRY OF HEALTH AND ENVIRONMENT**

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**Zakaria Hamid Khalil Hassan Zour, Samah Mouyad Mahmoud Al-Moula, THE EFFECT OF ELECTRONIC HUMAN RESOURCE MANAGEMENT PRACTICES IN ENHANCING THE ROLES OF KNOWLEDGE WORKERS: AN APPLIED STUDY AT THE HEADQUARTERS OF THE IRAQI MINISTRY OF HEALTH AND ENVIRONMENT-Palarch's Journal Of Archaeology Of Egypt/Egyptology 18(7), ISSN 1567-214x**

### **Abstract**

The researcher aims, through the current study, to identify the impact of electronic human resource management practices in the Iraqi Ministry of Health and Environment through the main study axes (e-recruitment, electronic training and development, electronic performance evaluation, and electronic compensation), and their level of contribution to enhancing the roles of knowledge Workers from During the main axes represented by (observer, participant, organizer, learner) and the problem of the study, which the researcher reached through the initial exploratory study that he conducted for the study community, the Iraqi Ministry of Health and Environment applies some electronic human resource management practices, but not in an integrated manner. In addition, no evaluation process was conducted on the level of application of these practices and the challenges they face, and the extent to which these practices reflect on the roles of knowledge workers and their enhancement in the researched ministry. Where an

intentional random sample was chosen consisting of (224) managers and directors representing the study community, and To achieve the hypothesis test, the researcher used the descriptive and analytical method, and the questionnaire was relied on as a main tool for the study in collecting data, and to achieve this, a main hypothesis was formulated from which (4) sub-hypotheses were formed. And tested using SPSS program and a set of statistical methods, including (simple linear regression). Through the study, the researcher reached a set of results, perhaps the most prominent of which is the Iraqi Ministry of Health and Environment applying some electronic human resource management practices, which are both (electronic employment and electronic compensation) and this was confirmed in the results of the practical side.

**Key words: (electronic human resource management practices, knowledge workers' roles).**

### **Introduction**

In today's information technology-based economy, the need for a human resource management system has become a necessity to meet the challenges of human resources in the twenty-first century, and from this basis and in order to reach the most effective human resource management practices, organizations began to benefit from the development in information and communication technology that has been achieved. Considering it a real revolution in the administrative field, which has caused changes in the methods of administrative work and the effectiveness of performance by adopting the application of electronic management, which is one of the integrated digital systems that aims to transform administrative work from traditional patterns to electronic ones, And based on the technological programs that helped in making administrative decisions in the fastest time and at the lowest cost by providing information continuously and quickly to the decision-maker, and to keep pace with the technological development in communication and information, many organizations began to adopt electronic human resources management. In light of the growing role of the human resource who owns knowledge, the world economy today has shifted from an economy based on material resources to an economy based on knowledge, after the resource associated with knowledge has become the main resource in building the management strategy and has a great impact on the productivity of organizations and in the completion of tasks ,In light of this, organizations greatly need knowledge and knowledge workers to be in contact with creativity that depends on the rapid growth of information technology, so managers need to realize the motivational glimpses that work to move these individuals, and the human resource department can, rather, it must play a focused role Experience in managing these workers in organizations.

Based on the foregoing, the research was divided into six sections, where the first topic came to the research methodology, the second section on the practices of electronic human resource management, the third study on the

roles of knowledge makers, the fourth study for the practical aspect, the fifth section for conclusions and the sixth topic recommendations.

## **First - research methodology**

### **1- the research problem**

The primary problem in the Iraqi Ministry of Health and Environment is the application of some electronic human resource management practices, but not in an integrated manner. Moreover, no evaluation process has been conducted on the level of application of these practices and the challenges they face and the extent to which these practices reflect on the roles of knowledge workers and their enhancement. It supports the roles of knowledge workers that characterize the researched ministry, as well as the lack of focus on the roles of knowledge workers and the extent of the benefit that can be achieved from their roles that they exercise, which will lead to the achievement of distinguished performance and thus lead to the development of human resources in the researched ministry.

Based on the above, the study problem can be demonstrated by raising a number of questions, as follows:

- a) To what extent are the electronic human resources management practices applied in the Iraqi Ministry of Health and Environment? What are the practices most applied to it?
- b) To what extent is the Iraqi Ministry of Health and Environment interested in enhancing the roles of knowledge workers? What are the dimensions that receive the most attention to them?
- c) Is there a relationship to influence the practices of electronic human resources management in enhancing the roles of knowledge workers?

### **2-theimportance of research**

#### **importance of the research lies in the following aspects: -**

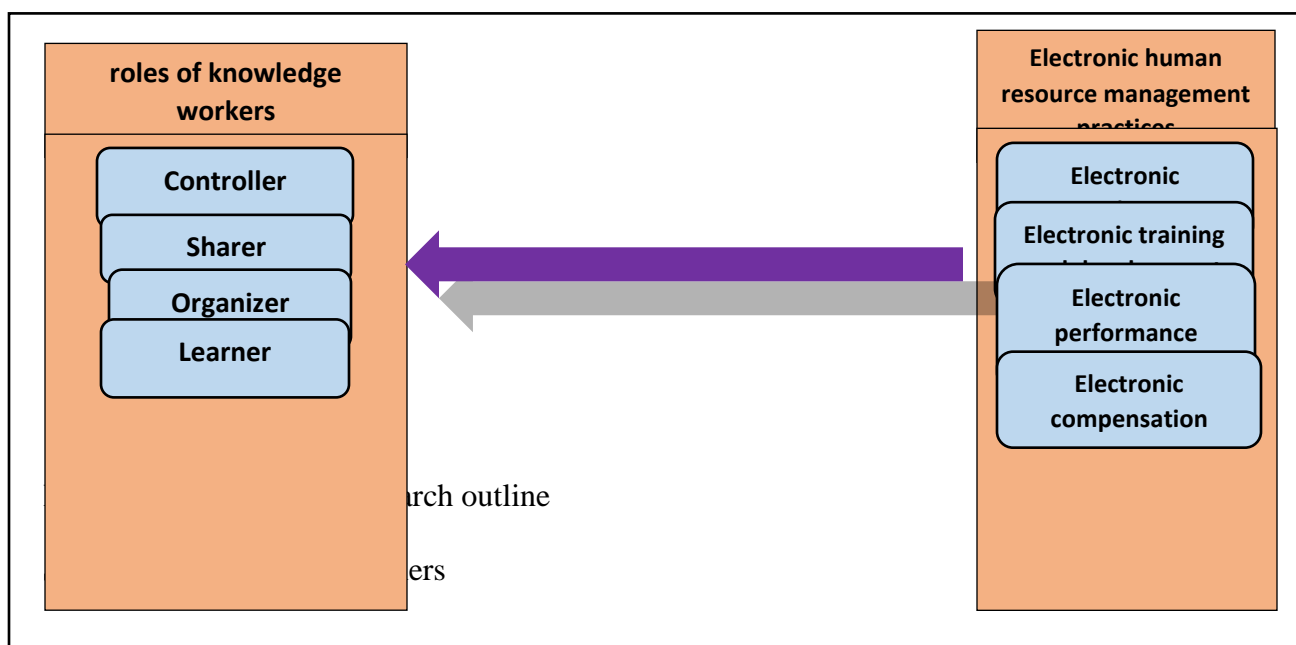
- a) That the current study dealt with modern concepts in management thought, which were exemplified by the practices of electronic human resources management and improving the roles of knowledge workers, and in light of this, the study will seek to provide a scientific and practical contribution on how to benefit from and invest in electronic human resource management practices In enhancing the roles of knowledge workers.
- b) The importance of the place of conducting the study, which is the health services sector in the Ministry of Health and Environment, because it is one of the vital sectors in the Iraqi state, and it is a priority in the national policy, especially as it cares about the life and health of the Iraqi citizen, and that conducting such a study and the results of it, it hopes that it will reach proposals Enhance the role of this sector.

- c) Consolidating conviction in the researched ministry of the importance of adopting electronic human resource management practices to enhance the roles of knowledge workers.

### 3- Research objectives

- a) Attempting to direct the attention of the management of health organizations on the nature of the variables (electronic human resource management practices) and their role in enhancing the roles of knowledge workers.
- b) The researcher seeks to present a study that will benefit the community of the researched ministry in developing its human resources.
- c) What is the impact of electronic human resource management practices in enhancing the roles of knowledge workers?

### 4 - the hypothetical scheme of the research



### 5 - research hypotheses

The first main hypothesis: - There is a significant and significant impact relationship between the practices of electronic human resources management in the roles of knowledge makers. The following sub hypotheses are divided into: -

- (1-1-1) There is a significant and significant impact relationship for electronic recruitment in the roles of knowledge makers (Controller, Sharer, organizer, learner).

(2-1-1) There is a significant significant impact relationship for electronic training and development in the roles of knowledge makers (Controller, Sharer, organizer, learner).

(3-1-1) There is a significant significant impact relationship for the evaluation of electronic performance in the roles of knowledge makers (Controller, Sharer, organizer, learner).

(4-1-1) There is a significant significant impact relationship for electronic compensations in the roles of knowledge makers (Controller, Sharer, regulator, learner).

## **Secondly - Electronic human resource management practices**

### **1- the concept of electronic human resource management**

The concept of electronic human resource management denotes various meanings, and that it is a web-based solution that takes advantage of the latest web application technologies (internet and intranet) to provide solutions for managing human resources at the time you need (Kwan & et al, 2019: 22). It is considered a comprehensive, easy-to-use and feature-rich program. It is flexible enough and is designed to suit all the needs of the organization (Kaur, 2013: 35)It also indicates the processing and transmission of digital information used in human resources management, including text, audio and visual images from various technological technologies, and that it provides the ability to meet the requirements of human resources management today, and its adoption reduces the interference of human resources personnel, which allows managers And employees perform HR tasks directly using self-service tools (Varma, 2010: 25)To understand whether organizations gain a competitive advantage and become better places to work if they are accredited or whether organizations follow competitive imperative, let's understand what it means first, and why do we need to know how researchers define it? Simply because a simple change in terminology may lead to different trends in study or in targeted and diverse sub-groups of HRM. (Bondarouk, 2014: 12).

In light of the above, we would like to clarify the definitions of electronic human resources management according to the different viewpoints of researchers and the nature of their perception of it. Table (1) presents a group of them as follows:

Table (1)

Definitions of electronic human resources management according to some researchers

sequence	Source	the definition
1	(Hooi,2006:466)	A web-based solution that uses online kiosks or portals to assist with HR administration functions
2	Voermans & van Veldhoven ,2007:887	A collection of databases, computer applications, hardware and software used to collect, store, manage, present, display and process data for human resources
3	Sanayei and Mierzaei 2008:79	Using computer systems, interactive electronic media and communication networks to implement the function of the human resources management department
4	Bondarouk & Ruel ,2009:507	An umbrella term that covers all integration mechanisms and its contents between human resource management and information technology, with the aim of creating value for targeted managers and employees.
5	Martin&Reddington 2010,1553	Web-based systems, including the latest in social media and mobile communications technologies, to change the nature of the interactions between human resource personnel, line managers, and technology.
6	Morsy& el Demerdash,2017:82	An integrated information system that includes some applications of human resources presentation and demand forecasts, human resource planning, recruitment information, selection, information on training and development, salary increase, compensation forecasting, and employee relations.
7	Berber & et al,2018:23	A method for implementing HRM strategies, policies, and practices in organizations through informed and targeted support and with full use of channels based on web technologies.
8	Nasar & et al,2020:2	Web-based technology that integrates all HR activities and transforms the role of human resource managers making them strategic partners in organizations.

Source: Prepared by researchers according to the sources mentioned in the main table

## 2 - electronic human resource management practices

**a - E-recruitment:** - The business world suffers from a shortage of skilled workforce and organizations are struggling to attract and retain human capital (AlAmeri, 2017: 82). This makes the organization's efforts to attract, select, develop and retain skilled employees in key strategic positions the most important issue for the survival and growth of organizations, and to compete effectively in a complex and dynamic environment and to achieve sustainable progress, the ability of the organization to attract high-quality human capital is a real competitive advantage (Brandãoa & et al. , 2019: 273). Since traditional recruitment is costly and time consuming, organizations should adopt strategies that will reduce time and money (Tong, 2009: 281).Online

recruitment is defined as the announcement of vacancies on the company's website or the online recruitment website. (ALMashrafi, 2020: 3) E-recruitment helps to present a larger group of candidates and a more efficient recruitment process due to the shortening of the process time and the reduction of recruitment costs. (Findıklı & Bayarçelik, 2015: 426) Reducing recruitment costs, speeding up the process, reaching a wider group of applicants, more efficient feedback, reachability at any time, and providing varied and technically good candidates are among the benefits of using the Internet in employment. These advantages of using the Internet increased its popularity among human resources experts working in various sectors and expanded its use (Holm, 2010: 91).

**b - Electronic training and development:** - Both (Arsovski et al, 2007: 339) indicated that the Internet has become the cornerstone on which training courses are built and by means of which the human cadre can be trained electronically, and by adopting electronic infrastructures to secure communication and access to those Courses appropriately, this may lead to the emergence of a distinct model of human cadre that possesses great ability to deal with all conditions in organizations operating in various competitive conditions within the internal or external work environment. In addition to empowering an electronic trained human cadre to achieve the goals of the organizations, it will also enhance the competitiveness and strategy, by enhancing the cultural and knowledge aspects resulting from the e-training courses, which in turn will undoubtedly enable business management, and the electronic operations of the organizations (Ramayah & et al, 2012: 125) . and described e-training as activities focused on learning and supported by information and communication technology, and training can take place through an organized intranet or via the Internet, using a variety of multimedia such as audio and video seminars and resource links that provide a solution for learning about distance. (Wolor & et al, 2020: 444) Its importance lies in having the freedom to train employees, keeping pace with the rapid development of information technology and programs used for learning purposes and allowing the largest number of trainees to attend different levels of training according to the principle of equal opportunities and training for all, as well as providing multiple and varied sources of information that provide opportunities for comparison, discussion, analysis, evaluation, and updating information and skills. Learners with the latest information in addition to facilitating the exchange of experiences through electronic training media (Alrubaie & et al, 2020: 5) It can be said that the main goal of electronic training revolves around granting working individuals of different levels of employment and administration the ability to accomplish their work and the requirements of their jobs with some creativity and creativity, and to equip them with skills and develop their abilities by relying on web technologies (Alkali & Abu Mansor, 2020: 775).

**c - Electronic performance evaluation:** - The performance evaluation process is one of the important processes for employees and the organization alike, and through it the organization is able to identify the actual level of employee performance and the degree of their commitment to the organization's regulations and instructions and distinguish between distinguished employees from others. He attains many advantages, including the possibility of promotion, an increase in wages, or a bonus payment if he has presented an outstanding performance, or on the contrary, his poor performance may cause a penalty. Therefore, the organization, through the electronic human resources department, provides the performance evaluation process electronically by providing an electronic performance evaluation system for managers that gives them the ability to measure the performance of employees and write performance reports electronically and send them to human resources and provide feedback to the employee electronically (Khashman, 2014: 78). The main objective of using technology to classify performance is to develop individual performance and thus develop the organization's performance by providing the necessary knowledge, necessary techniques and methods to employees in addition to support systems. (Bensom & et al, 2002: 398). The electronic or online performance evaluation refers to the use of technology necessary to create systems and processes through which employees are evaluated according to their performance in the required tasks within the organization, and the evaluation must highlight the strengths and weaknesses of the employees, in addition to clarifying the path for future development, and in order to consider the process. Reliable, the information used must be objective and not inconsistent (inaccurate) and causal. Lack of objective data may lead to an apparent lack of transparency and unfairness among employees. Moreover, the evaluation must be transparent and confidential (Piggot-Irvine, 2003: 5). Effective electronic performance management systems provide benefits to the organization, managers and employees, including its ability to increase the scope of supervision and reduce the time that managers spend in monitoring the performance and behavior of employees, as well as it has provided effective systems through the use of the method (360 degrees) through the Internet, where this method was presented. The ability to evaluate the performance of employees by everyone who has a relationship with employees, whether from inside or outside the organization. (Nivlouei, 2014: 151)

**d - Electronic Compensation:** - Compensation policies have become, at present, one of the most powerful strategies of the organization to attract and retain competent employees, especially in light of intense competition for talent. Thus, a good compensation system helps the organization achieve its strategic goal by positively affecting employee loyalty. And their commitment and performance. (Vo Ha, 2011: 32) Most of the traditional compensation systems in organizations are inflexible, time consuming, have inefficient



processes, and partly reflect the bureaucracy within human resources. Traditional methods of awarding rewards and compensation are usually based on "pay for work" which focus mainly on the job rather than on performance, Consequently, you fail to recognize and motivate talent to attain higher levels of performance. (Wright & Dyer, 2000: 58)Therefore, the organization must distinguish itself from others through its compensation strategies in order to attract and retain high-caliber working individuals. Therefore, their strategy must be able to attract and retain the right type of employees, and one of the ways to keep them is to provide compensation packages. Good, and the organization can not succeed in maintaining its workforce unless it provides good wages and benefits that compete with it in the labor market, because this will motivate them to stay and commit to the organization. (Judges, 2018: 19)Compensation and rewards management when using electronic human resources management enables the organization to manage it more effectively and with little effort and it is called electronic compensation, and it is described as the use of software tools on the basis of the web that enables the organization to carry out the tasks of awarding rewards that range from collection, storage and processing to analysis, use and distribution For compensation data and information (Nurshabrina & Adrianti, 2020: 212).

### Third - The roles of knowledge workers

#### 1- the concept of knowledge workers

The concept of knowledge workers can be clarified by presenting and stating a set of definitions that many writers and researchers have circulated, as in Table (2):-

Table (2)

Some definitions of knowledge workers

sequence	Source	the definition
1	(Davenport,2010:17)	The key to creativity and growth in organizations operating at this time. They create products and services, design marketing programs and formulate strategies.
2	(Liu& Chai, 2011: 3)	Individuals who master and use symbols and concepts, knowledge and information for work, and make use of modern science and technology to improve process efficiency with a strong knowledge of the ability to learn for knowledge and innovation. And they use their minds instead of their hands when creating a wealth of knowledge.
3	(Hoq& Akter,2012:93)	People who spend most of their time generating, applying and imparting knowledge in organizations.
4	(Hashem, 2014: 34)	They are individuals who acquire data and information from others and contribute to the process of collecting information, and then carry out the process of processing that

		data and thus they add value to that information that contributes to the completion of work.
5	(Al-Shammari & et al, 2016: 11)	The power of human resources in the organization and the key that provides sustainable competitiveness.
6	(Shujahat,2018:4)	An employee who uses knowledge resources as inputs and whose outputs are also cognitive in terms of innovative ideas, new processes, and new products.

Source: Prepared by researchers according to the contents of the above table

## 2 - the roles of knowledge workers

**a–Controller:** - Organizations need an effective control process in order to ensure that all activities in each major area are in line with the organization’s objectives and established standards, and often the result of using an effective control system is to obtain better product or service quality, in addition to Feeling confident that the invested resources are being used appropriately, and since organizations make large investments in multiple areas, it is important that they have control systems that help them deal with change and uncertainty in an effective manner, and that the control system in organizations meets the need to be assured of optimal and proper use Of resources and their preservation to achieve the goals pursued by the organization,The application of control systems allows large organizations to reduce costs and prevent potential errors, and organizations also need to apply different types of control systems, and all of these systems follow the same basic process that can be represented in three steps: setting standards, measuring performance and taking corrective measures (Mochalova, 2017: 11).And (MULLINS, 2010: 665) described the timing for achieving the goals, as they are carried out by the competent authority with the aim of ensuring that the work proceeds according to the set goals and on the time specified for them. In most organizations, the responsibility for oversight falls on individuals who possess high capabilities and skills called the (Controller), who contribute to the process of developing the supervisory system. (Bloom, 2008: 47) and (Reinhardt, 2012: 41) indicated that knowledge workers possess unique skills and capabilities, and an integrated reference base on laws, instructions and procedures for how the work is done, and they have a clear vision to monitor organizational performance, as it gives them their job status. Freedom to track work, know actual problems, and follow up on the implementation of performance and daily work procedures.

**b–Sharer:** - In light of the rapid changes taking place in today's world, knowledge has become, mainly from various contemporary organizations, on knowledge, as knowledge in the modern era is considered one of the most important factors of production, and the perception of it has become superior to the traditional production factors that enable the organization to create a competitive advantage. Sustainable, survival and continuity in a rapidly

changing world, so it was imperative for organizations to manage that knowledge in a way that contributes to the investment of intellectual capital and through the dissemination and sharing of knowledge among members of the same organization for its organizational success. Hence, the role of knowledge management has emerged with its multiple processes, the most important of which is knowledge sharing as a strategic entry point for different organizations that can contribute to achieving the sustainability of the organization's performance, as it represents one of the basic processes of knowledge management, and from the organizational point of view, performance can be improved by providing useful and important knowledge for workers. Also, in order to convert knowledge into valuable organizational assets, it is necessary to share this knowledge among workers and apply it. (Sawadi, 2020: 147) And (Mohanta, 2006: 78) that working individuals who provide innovative activities and use knowledge to be more productive are called knowledge workers, and they use all kinds of knowledge and ideas in the performance of activities and tasks, transforming their ideas into products, services, or processes, as well as creating knowledge. And they know how to benefit from it and share it with others across the organization. In the same direction between (Jayasingam & et al, 2010: 135), they are the key to improving the level of knowledge management practices in organizations through the formation, sharing and application of knowledge. He described them (Reinhardt & et al, 2011: 164), the individuals who spread information in the workplace, and through them the transfer of explicit or implicit knowledge to other individuals through the communications that take place between them, as the forms of knowledge sharing take multiple forms such as direct communication that occurs between individuals. In conferences, meetings, training workshops, dialogue sessions and exchange of views.

**c - organizer:** - (Hebron, 2018: 14) explained that after determining the parameters of the plan necessary for the optimal use of human resources, an appropriate organization must be put in place to implement this plan, thus becoming a means to achieve an end. Designing the organizational structure that clarifies the links and links between various jobs and businesses and between working individuals (heads and subordinates), and he must also be aware of the nature of the thorny relationships between his administration and the rest of the departments in the organization (or the rest of the parts and levels of the organizational structure). (Al-Sultan, 2010: 220) described the process of arranging the organization's resources in a way that enables its activities to contribute in an organized manner to the goals of the organization. (Walczak 2005: 330) in light of the transformation of the global economy from industrial manufacturing / product-oriented economy to a knowledge-based economy, where the basic resources are information or knowledge, so the effective management and organization of intellectual capital has become one of the challenges facing existing organizations On

knowledge, And that the organization helps the organization to manage and create an organizational culture that facilitates and encourages participation and appropriate use and formation of knowledge that gives organizations a strategic competitive advantage, through the organizational structure, which is an important factor in the use of technology and more precisely, the organizational structures must be flexible to encourage knowledge exchange and cooperation. Across organizational boundaries to enhance knowledge formation.(Al-Yasiri and others, 2018: 210) indicated that knowledge workers possess organizational capabilities, which represent perceptual and field knowledge of organizational affairs at the level of managing any work they are assigned to, and they also possess the ability and ability to deal with the administrative and organizational subsystem through which technology, processes, and processes are integrated. Resources, rules, procedures and instructions. They were described (Reinhardt & et al, 2011: 164) individuals who organize and plan activities, and carry out the process of organizing and coordinating knowledge and all matters related to intellectual capital to achieve the best competitive advantage for the organization.

**d - learner:** - It has become known that the competitiveness of organizations at the present time is based on knowledge that has become a decisive factor in the success of these organizations, which means that the success of organizations depends on their ability to manage their information, and thus the use and development of such a valuable resource. It will make learning a top priority in the accounts of organizations operating under a highly competitive, knowledge-based environment, thus accelerating the formation of new knowledge and thus becoming educated organizations capable of innovation and adaptation to environmental variables.(Argote & Miron-Spektor, 2011: 1124) defined education as constant relative change in behavior, which occurs due to the interaction of the individual with the surrounding environment, through study, observation and experience, which affects the capabilities, perception, motives, behavior and performance of the individual, and includes the acquisition of knowledge that leads to changes In behavior, when an employee learns he acquires knowledge, and the knowledge gained may be explicit or implicit, or both. He explained (Argote, 2011: 2), the organization in the knowledge economy, the knowledge workers are the most important individuals because they possess the desire for continuous learning, and the acquisition of knowledge and skills that develop their performance.(Argote & Miron-Spektor, 2011: 1124) defined education as constant relative change in behavior, which occurs due to the interaction of the individual with the surrounding environment, through study, observation and experience, which affects the capabilities, perception, motives, behavior and performance of the individual, and includes the acquisition of knowledge that leads to changes In behavior, when an employee learns he acquires knowledge, and the knowledge gained may be explicit or implicit, or both. He

explained (Argote, 2011: 2), the organization in the knowledge economy, the knowledge workers are the most important individuals because they possess the desire for continuous learning, and the acquisition of knowledge and skills that develop their performance.

**Fourthly - Practical side**

The first main hypothesis: - There is a significant and significant impact relationship with the electronic human resource management practices in the roles of knowledge makers. The following sub-hypotheses stem from it:

1- The first sub-hypothesis of the first main hypothesis: - There is a significant and significant impact relationship for electronic employment in the roles of knowledge workers (Controller, Sharer, organizer, learner).Table (3) shows the results of regression analysis of the effect of electronic employment on the roles of knowledge workers (Controller, Sharer,organizer, learner) :-

Table (3)

Results of the impact of electronic recruitment on the roles of knowledge workers (Controller, Sharer,organizer, learner). Using the linear, logarithmic hierarchical model

Indication level (0.05)	(F) calculated value	(R2) coefficient value	(beta) coefficient value	Constant value ( a)	Dependent variable	Independent variable
moral	26.339	%10	0.248	3.198	Controller	Electronic recruitment
moral	30.958	%13	0.198	2.158	Sharer	
moral	27.783	%11	0.227	3.353	organizer	
moral	28.368	%12	0.256	3.126	learner	
moral	30.872	%12	0.169	3.632	roles of knowledge workers	

- o The tabular F value under the significance level (0.05) and the degree of freedom (1,222) = 5.02
- o The tabular F value below the significance level (0.01) and the degree of freedom (1,222) = 87.8
- o Source: Prepared by researchers based on the results of the electronic calculator

2- The second sub-hypothesis of the first main hypothesis: - There is a significant significant impact relationship for electronic training and development in the roles of knowledge workers (Controller, Sharer,organizer, learner).Table (4) shows the results of regression analysis of the effect of electronic training and development on the roles of knowledge workers (Controller, Sharer, organizer, learner) :-

Table (4)

Results of the impact of electronic training and development on the roles of knowledge workers (Controller, Sharer,organizer, learner) using the log-hierarchical linear model

Indication level (0.05)	(F) calculated value	(R2) coefficient value	(beta) coefficient value	Constant value ( a)	Dependent variable	Independent variable
moral	15.661	7%	0.183	3.552	Controller	electronic training and development
moral	19.092	12%	0.175	3.007	Sharer	
Immoral	3.109	2%	0.091	4.960	organizer	
Immoral	2.450	1%	0.064	4.137	learner	
Immoral	4.130	2%	0.095	3.983	roles of knowledge workers	

- The tabular F value under the significance level (0.05) and the degree of freedom (1,222) = 5.02
- The tabular F value below the significance level (0.01) and the degree of freedom (1,222) = 87.8
- Source: Prepared by researchers based on the results of the electronic calculator

3 - The third sub-hypothesis of the first main hypothesis: - There is a significant significant impact relationship for evaluating electronic performance in the roles of knowledge workers (Controller, Sharer, organizer, learner).Table (5) shows the results of regression analysis of the effect of electronic performance evaluation on the roles of knowledge workers (Controller, Sharer, organizer, learner) :-

Table (5)

Results of the impact of electronic performance evaluation on the roles of knowledge workers (Controller, Sharer, organizer, learner) using the log-hierarchical linear model

Indication level (0.05)	(F) calculated value	(R2) coefficient value	(beta) coefficient value	Constant value ( a)	Dependent variable	Independent variable
moral	24.949	10%	0.213	3.490	Controller	Electronic performance evaluation
moral	13.343	7%	0.195	3.953	Sharer	
Immoral	3.180	1%	0.071	4.050	organizer	
Immoral	1.080	1%	0.040	4.234	learner	
Immoral	3.433	2%	0.086	4.037	roles of knowledge workers	

- The tabular F value under the significance level (0.05) and the degree of freedom (1,222) = 5.02
- The tabular F value below the significance level (0.01) and the degree of freedom (1,222) = 87.8
- Source: Prepared by researchers based on the results of the electronic calculator

4 - The fourth sub-hypothesis of the first main hypothesis: - There is a significant significant impact relationship for electronic compensations in the

roles of knowledge workers (Controller, Sharer,organizer, learner).Table (6) shows the results of regression analysis of the effect of electronic compensation on the roles of knowledge workers (Controller, Sharer, organizer, learner) :-

Table (6)

Results of the impact of electronic compensation on the roles of knowledge workers (Controller, Sharer, organizer, learner) using the log-linear hierarchical model

Indication level (0.05)	(F) calculated value	(R2) coefficient value	(beta) coefficient value	Constant value ( a)	Dependent variable	Independent variable
moral	50.785	%19	0.278	3.162	Controller	electronic compensation
moral	29.025	%12	0.203	3.504	Sharer	
moral	9.999	%4	0.120	3.838	organizer	
moral	5.413	%3	0.085	4.047	learner	
moral	35.075	%13	0.152	3.754	roles of knowledge workers	

- The tabular F value under the significance level (0.05) and the degree of freedom (1,222) = 5.02
- The tabular F value below the significance level (0.01) and the degree of freedom (1,222) = 87.8
- Source: Prepared by researchers based on the results of the electronic calculator

And to know the effect of the first major variable (electronic human resource management practices) on the roles of knowledge workers (Controller, Sharer, organizer, learner). The results were as shown in Table (7):-

Table (7)

Results of the impact of electronic human resource management practices on the roles of knowledge workers (Controller, Sharer, organizer, learner) using the log-hierarchical linear model

Indication level (0.05)	(F) calculated value	(R2) coefficient value	(beta) coefficient value	Constant value ( a)	Dependent variable	Independent variable
moral	47.975	%18	0.368	2.834	Controller	electronic human resource management practices
moral	14.586	%6	0.194	3.562	Sharer	
moral	7.160	%4	0.152	3.946	organizer	
moral	15.027	%6	0.204	3.510	learner	
moral	32.069	%13	0.198	3.587	roles of knowledge workers	

- The tabular F value under the significance level (0.05) and the degree of freedom (1,222) = 5.02
- The tabular F value below the significance level (0.01) and the degree of freedom (1,222) = 87.8

○ Source: Prepared by researchers based on the results of the electronic calculator

And based on the previous statistical results, it is possible to accept the validity of the first main hypothesis, which is that (there is a significant impact relationship with moral of the practices of electronic human resources management in the roles of knowledge workers).

### **Fifth - CONCLUSIONS**

1. It became clear to the researcher during the visits and daily living of the researched ministry and during the period of distributing the questionnaire that the surveyed sample and the individuals working in the researched ministry had limited information about the practices of electronic human resources management.
2. The higher management does not have a clear vision of its importance and role in improving the roles of knowledge makers, despite its possession of the administrative requirements that support its application in the researched ministry, as it is flexible enough that it will help it to introduce modern electronic software, and there is no support and commitment from the higher management in the surveyed ministry to adopt the application of all electronic human resource management practices.
3. The Iraqi Ministry of Health and Environment applies some of the electronic human resource management practices, and this has been confirmed in the results of the practical side, which supports the researched ministry's orientations towards electronic business in some human resource functions.
4. E-recruitment is considered the most applied practice in the Iraqi Ministry of Health and Environment, but it does not include electronic selection and thus leads to a lack of integration of this practice in the investigated ministry.
5. The Iraqi Ministry of Health and Environment has indicators of the roles of knowledge workers at a good level, and that the learner's role is the most interesting dimension due to the nature of the ministry's renewed work, which necessitates them to develop and acquire new skills.
6. Most of the knowledge workers in the researched ministry have a clear vision to observe and follow up the performance, and the job position enables them to follow up the work and know the problems facing the ministry before they occur.
7. Most of the knowledge workers in the Iraqi Ministry of Health and Environment are distinguished by their possession of a high level of knowledge and experience, and they use all kinds of knowledge and ideas in performing activities and tasks, and converting their ideas into products, services or processes, as well as forming knowledge, and they know how to benefit from it and share it with others through Ministry.
8. It became clear that the knowledge workers in the surveyed ministry have the ability to learn to develop their skills and acquire new skills that develop their performance to adapt to any changes as well as expand knowledge and information, and they are willing to obtain, acquire and employ knowledge in the field of work.



9. It became clear that knowledge workers in the Iraqi Ministry of Health and Environment possess perceptual and applied knowledge of organizational affairs at the level of any administrative work assigned to it, and the ability to absorb and understand documents and employ resources and information in work activities.

### **Sixthly - Recommendations**

**1** - Due to the importance and role of electronic human resource management practices in enhancing human resource operations and their wide application in the surveyed ministry, the research recommends increasing attention to it through:

- Holding seminars, meetings and workshops, as well as issuing an introductory leaflet to familiarize individuals working with electronic human resource management practices.
- Work to spread the culture of e-business among the individuals working in the surveyed ministry and introduce them to the benefits and advantages that will be achieved as a result of applying the practices of electronic human resources management.
- The need to pay attention to raising the awareness of working individuals about the importance of switching to electronic human resource management practices, and using their applications and tools in their daily work.
- Emphasis on the need for cooperation and coordination between the Ministry's formations researched with regard to the transition to electronic human resource management practices.

**2** - The need to increase the support of the departments in the Iraqi Ministry of Health and Environment by designing a reward system for the distinguished in electronic work, and creating an atmosphere of competition that will motivate employees to improve performance with electronic work.

**3** - Working on adopting electronic systems on a large scale in all human resource management practices in order to further improve the roles of knowledge makers, as well as the speed and great accuracy in completing work and tasks, while saving time and effort and increasing the efficiency of working individuals.

**4** - The need to enhance the practice of electronic recruitment, and its importance in obtaining human resources through the following: -

- Paying attention to the website of the Iraqi Ministry of Health and Environment through ease of use, and displaying information related to the job vacancy and the qualifications of the required person in detail.
- Adopting the electronic selection practice to differentiate between those qualified to fill the vacant position to ensure transparency in the recruitment and selection process.

5 - The necessity of increasing focus and attention to knowledge makers by providing them with material and moral support, granting them the authority and freedom in exercising their roles, and providing appropriate work conditions in order to present creative ideas and distinguished performance, which will help in improving and raising the level of performance in the investigated ministry.

6 - Work to give knowledge workers the largest role in problem-solving, decision-making and appropriate corrective action, and give them the necessary authority because they have an integrated reference base on laws, instructions and procedures on how to accomplish the work and they are the best party that performs the role of oversight.

7 - The need for the researched ministry to motivate knowledge workers to share the knowledge they possess by providing infrastructure and spatial, temporal and material facilitation to prepare an appropriate work environment supportive of knowledge sharing, grant them financial and moral rewards, and enhance the use of internet networks and communication channels to ensure the sharing and exchange of knowledge and its flow of flow with flexibility between the Ministry's formations Different.

8 - It is imperative for the surveyed ministry to provide the necessary educational and training programs that support their desire to learn, acquire and develop skills, help them continuously develop their capabilities, and make them able to keep pace with development and face the challenges of the speed of change in the nature of their work.

9 - The focus of the Iraqi Ministry of Health and Environment on investing the organizational capabilities of knowledge workers by expanding their granting of authority and involving them in policy-making, decision-making, implementation of plans and achieving goals in a manner that will ensure their survival and continuity of work.

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