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The impact of information and communication technology dimensions on human resources performance: an analytical exploratory study of a sample of the administrative staff in the Salah Al-Din health department

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Abstract
The aim of this study is to demonstrate the impact of information and communication technologies on the effectiveness of human resources in the Salah al-Din Health Department. Specifically, the utilization of information and communication technology acts as a true manifestation and concrete proof of its abilities and capability to contend. The study was restricted to a sample of individuals employed in public administrations under the Salah al-Din Governorate Health Department. This department is comprised of a collective of directors, department heads, divisional officials, and staff. In order to achieve the intended objectives, a survey research was carried out on the study sample utilizing the statistical software SPSS. The study variables were examined, along with a battery of tests to assess the robustness and reliability of the study model. To assess the influence of information and communication technology on the performance of human resources in the Salah al-Din Health Department, both the Cronbach's alpha reliability test and the one-sample test will be used. The study revealed that the integration of information and communication technologies in the Salah al-Din Health Department had a significant impact on improving the effectiveness of the workforce. This was achieved through the department's efforts in training and preparing employees to effectively utilize information and communication technology, restructuring human resources management, and promoting improved human performance through the adoption of high-performance practices.

Keywords: Information and communications technology, human resources performance

Introduction
There has been a growing discussion lately about the term information and communication technology (ICT) due to the significant changes and advancements witnessed in social and economic domains. This is a result of the revolution brought about by ICT. It has influenced every facet of cultural life, social, and economic life. ICT plays a crucial role in enhancing the performance of human resources. After using computers and electronic training, and employing that to achieve effective performance in the electronic modernization process, based on the impact of information technology and its role in selecting talents and improving their performance, as interest in information systems has increased because of this. Information has a crucial role in enhancing performance and facilitating the growth of institutions, enabling them to fulfill their objectives. It serves as a fundamental component and vital resource in all organizations, as the importance of information technology is evident in the extent of its ability to improve performance by providing information and communications, which are among the basic pillars. Information and communications technology (ICT) plays a crucial role in securing, storing, processing, and communicating information with great speed and accuracy. The performance of human resources is vital in achieving individual tasks and job satisfaction. ICT helps in describing job roles, defining tasks and responsibilities, and assists human resources in identifying and rectifying errors efficiently. Purpose-built software and interconnected networks facilitate the efficient and expeditious exchange of information inside the company. ICT also facilitates effective communication among organization members and eliminates obstacles that may impede the
smooth flow of work and information, ensuring accuracy and timeliness. Accordingly, the study will attempt to demonstrate “The impact of information and communications technology on performance.” Human Resources” in the Salah al-Din Health Department.

The first section: Research methodology
1. Research problem
The research problem lies in how human resources adapt to information and communications technology, and in jobs in the field of this technology and its impact on human resources through recruitment and how to communicate within the Salah al-Din Department, and analyzing data related to the performance of employees and whether they are trustworthy. Technology facilitates the process of collecting data and shows the importance of employee performance. This requires updating systems, improving capabilities, and facilitating procedures that help develop the performance of human resources in order to achieve its goals. This is closely related to the extent of the department’s ability to use information technology and the ability to equip it to reach an advanced position and a prominent position in the health sector. Here, the problem of the study crystallizes in answering the question following:What is the effect of utilizing information and communication technology on the efficiency of human resources in the Salah al-Din Health Department?

2. Research Importance
The significance of this study is in the endeavor to manage the vast quantity of information required to initiate the administrative procedures that necessitate transfer and transformation, facilitated by the communication process. Thus, this topic becomes of great importance as interest in it has increased in all institutions, as the communications sector has witnessed development. It has become a decisive pillar in any department or institution, and here lies the importance of this study through:
1. Describe the influence of information and communications technology on the effectiveness of human resources in the Salah al-Din Health Department.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information and communication technology</td>
<td>Human resources performance</td>
</tr>
<tr>
<td>-Application of information and communication technology</td>
<td></td>
</tr>
<tr>
<td>-Programs used</td>
<td></td>
</tr>
</tbody>
</table>

Fig 1: Hypothetical diagram of the study.

5. Research Assumes
A hypothesis appears to be a provisional answer to a question, so the initial question of the study must be redefined before it is formulated. As for the subject of the study, there must be hypotheses that govern its course based on the questions:

Main hypothesis
The usage of information and communication technology (ICT) applications and software has a statistically significant impact on increasing the performance of human resources, with a significance threshold of α<0.05.

The following sub-hypotheses branch out
1. The first hypothesis suggests that the application of information and communication technology has a statistically significant impact on increasing the performance of human resources, with a significance level of α<0.05.
2. The second hypothesis posits that the programs utilized to enhance human resources performance have a

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statistically significant impact at a significance level of α<0.05.

6. The limits of the study
1. Spatial boundaries: The spatial boundaries of this study are represented by the Salah al-Din Governorate Health Department in Iraq.
2. Time limits: The study took place in November and December of 2023.
3. Human boundaries: The human boundaries represent managers, department heads, and employees in the directorate.

The second section: The theoretical framework of the study
1. The concept of information and communication technology
The unmistakable link between the digital revolution, propelled by improvements in information and communication technology, and its extensive effect across other disciplines has been apparent in recent years. Over the past several years, there have been notable progressions in information and communication technology, resulting in a direct influence on individuals' economic, social, and cultural aspects of life as a result of the digital revolution. The state's capacity to maintain a consistent pace is crucial for economic growth. These transitions are regulated to maximize the utilization of existing and sustainable resources (Al-Sayed, 2019) [1]. Following the successful implementation of information technology in various administrative functions, organizations have shown a growing interest in this technology. Its impact has been significant, leading to substantial changes such as cost reduction in production operations, improved pricing, increased productivity, and enhanced quality. (Shehadeh, and Matarneh, 2014) [2]. The global transformations and rapid advancements, along with the accompanying challenges, have made information technology and communication indispensable tools for economic institutions, regardless of their scale or nature. To ensure their survival, all institutions must adapt to this technological progress. And it persists on the market. (The Global Innovation Index, 2015). They are all the techniques used in collecting, storing, processing and transmitting the results of the analysis, classification and extraction of information and directing the beneficiaries to benefit from it in the easiest ways while ensuring accurate and rapid completion.” (Jomaa and Nouri, 2015) [3]. The overall definitions indicate that they are new methods and methods with high efficiency for exchanging information. Among all users using computers, fax, wired telephones and the Internet.

2. The importance of information and communications technology
The marriage that took place between the various communications devices and means and the claims of information and the accompanying emergence of a new concept of technology had the greatest impact in facilitating the exchange of information and its availability in any part of the globe, which made the information spread directly and throughout the earth as soon as its preparation was completed. Although it was a great mystery and a hidden knowledge that only the responsible group of people had access to in a limited amount, modern technology had a prominent role in this field by transmitting information from the north to the south, passing through the east and west at the same moment, and all of this cast its weight on all political, economic and cultural fields. And educational, Social, media and advertising for all societies, so that our current era has become known as the era of the scientific, information and technical revolution, the era of information and knowledge explosion, the era of organic cohesion between computers and the human mind (Hafiz and Abbas, 2014) [4]. From the above it can be said that the importance of information technology appears in the following:
1. Respond and adapt to environmental requirements.
2. Coordination between departments.
3. Reducing dependence on manpower.
4. The management information system delivers timely information to different levels of administration to facilitate their roles in strategic planning, organizational structuring, and performance monitoring.
5. Evaluate the organization’s activities and evaluate the results in order to correct deviations. (Al-Adly, 2015) [5].

Information technology characteristics
Information technology has distinguished itself from other technologies by a number of characteristics, the most important of which are
1. Reducing time: Technology has made all places electronic.
2. Reducing space: It provides storage methods that accommodate a huge volume of stored information that can be easily accessed.
3. Sharing intellectual tasks with the machine: A result of the interaction between the researcher and the system.
4. Artificial Intelligence: The primary attribute of information technology is the advancement of knowledge and the enhancement of user training possibilities to achieve comprehensiveness and control over the production process.
5. Communication networks are formed by combining a collection of information technology devices. This enhances the transmission of information among users, industrialists, and machinery makers, facilitating the sharing of information with other endeavors. (Hammadi, 2017) [6].

4. Stages of development of information and communication technology.
Despite the newness of the term information and communications technology, and even though it is linked to computers, this does not mean that this term is the product of the hour. Therefore, we find, for example, that information and communications technology are interconnected and have gone through several historical stages that can be summarized with five basic stages
1. The initial phase of the information and communication revolution: The transition from oral information to written communication was a significant milestone in human history. This shift was facilitated by the development of writing systems, such as cuneiform and Sumerian writing, followed by pictorial writing, and eventually the advent of alphabets. These advancements effectively brought an end to the age of relying solely on spoken words, which coincided with the decline of human mental capacities.
2. The second information and communications revolution included the rise and advancement of printing in its different forms, which facilitated the widespread distribution of information and communication through an abundance of publications across larger geographic areas. (Al-Kawaz and Al-Talhan, 2018) [11].

3. The third information and communications revolution is characterized by the advent of diverse audio and visual information sources, including the telephone, radio, television, discs, audio cassettes, wireless technology, as well as printed and paper media. These sources facilitated the dissemination of information and enhanced the flow of communication.

4. The Fourth Information and Communications Revolution refers to the invention and subsequent development of computers, progressing through many phases and generations. This revolution encompasses the characteristics, advantages, and beneficial impacts of computer-based communication systems.

5. The fifth information and communications revolution: The marriage between advanced computer technology and various types and trends of technology has achieved the possibility of transmitting huge amounts of data and information across huge geographical distances at great speed, regardless of time and place, reaching various information networks, most notably the Internet. (Balqidum, 2013) [8].

The third topic

Human resources performance

1. The concept of human resources performance

The individual performs the work assigned to him by exerting effort, which is based on accuracy and the ability to plan, implement, supervise, and make the appropriate decision, which achieves certain results at different levels depending on the individual’s influence on the work climate, motivation, and ability to complete the work, in addition to several factors. It relates to workers’ skills, abilities, and experiences.” (Bin Arama, 2018) [19] Human performance may be defined as the level of accomplishment and fulfillment of the duties that constitute an individual’s work. It demonstrates how the person fulfills or meets the duties that constitute the work. It expresses the amount of energy exerted, whereas performance is evaluated based on the outcomes achieved. (Daas, 2019) [111]

2. The importance of human resources

Although capital is crucial, human resources are regarded as one of the most valuable assets. Without human involvement, these assets are rendered meaningless until human resources utilize and exploit them in production to attain optimal pleasure and create prosperity. The human resource, with its capacity for creativity and originality, Development has the ability to overcome the limited availability of natural resources and enhance the productive capacities of society. The human person is the fundamental element of human resource management. Human resources may generate wealth and profits by using their skills and expertise, rather than relying on the transfer of material resources to achieve financial success. (Al-Aqra’, 2017) [12]. Overall, the significance of human resources has grown after advancements in science and technology, which have enhanced their vitality, productivity, and relevance, as well as altered their nature and functions. The advancement of information technology has resulted in a rise in the need for technical professionals. This has led to a requirement for non-traditional skills for leadership roles in information management. Additionally, the introduction of technology has become necessary. Contemporary techniques and their dependence in the functions and responsibilities of human resources management, such as strategic planning, recruitment, talent acquisition, and appointment. The source of this information is Multif, 2016 [14]. The significance of human resources management resides in the subsequent factors:

1. There is no organization without human resources management.
2. It develops the skills of individuals working in the organization.
3. Make appropriate plans for training.
4. It studies individuals’ problems and addresses them.
5. Choose the appropriate individuals to fill the positions. (Al-Labadi, 2015) [13].

3. Determinants of human resources performance

The importance of the determinants of human performance is highlighted, as it is considered one of the most important resources of the organization at all, capable of achieving its goals due to its contribution to the process of motivation, training, and participation in decision-making processes. Through the interaction between performance determinants, the following results:

1. Individual motivation: It expresses the extent of the individual’s desire to work, which can appear through his enthusiasm and desire for work, which expresses the compatibility of this work with his inclinations and directions.
2. Work climate: It expresses the satisfaction provided by the internal work environment, which is his feeling of satisfaction with his work after he has achieved his desires and goals and satisfied all his needs.
3. The individual’s ability to perform work: This ability can be attained by the individual through training, education, and acquiring experience, skills, and knowledge specialized in work.
4. The situation (internal organizational environment): The organizational environment of a job is characterized by several factors, such as the work atmosphere, supervision, availability of resources, administrative systems, organizational structure, communication system, authority, leadership style, incentive system, and reward and punishment mechanisms. (Sharatiya, 2014) [16].

4. Objectives of human resources management.

The survival of organizations, at all levels and types, depends on the way they are used to employ individuals and the way they are managed to achieve the goals they aspire to. The human resource manager carries out a set of activities related to the exploitation of the human element, which are activities that are not applied in other units of the organization, but they help achieve the goals that Managers of other units also strive to achieve them, because the goals are shared between the human resources department and the organization. (Zazaa, 2017).

The most important objectives of human resources management can be summarized as follows:
1. Selecting the most qualified people to fill current positions and values by preparing and training them to perform their tasks in the required manner.
2. Ensuring equitable treatment and fair opportunity for all employees inside the business, especially with regards to promotions, salaries, and professional growth.
3. Achieving effective cooperation among employees to achieve the organization’s goals.
4. Educating workers about the importance of their role in achieving the goals of the economic development plan and pushing them to make their maximum efforts.
5. Providing workers with all the data they need regarding the project, its products, policies and regulations, and communicating. They provide their viewpoints and recommendations to authorities prior to reaching a certain choice that has an impact on them. (Borras, 2015).

5. There are many challenges and obstacles facing Human Resources management, the Most Prominent of which are

1. **Increased reliance on modern technology:** Changes in modern technology bring about a change in skills and businesses, and technology developments constitute a restriction on resource management. Here, the importance of some activities such as training, development, and planning for the future career increases in a way that suits meeting the needs of these changes.

2. **Changes in the composition of the workforce:** Changes in the proportion of female workers, their increase, and the change in the workforce impose an additional responsibility for human resources management. The rising proportions of female employees engaging in the labor market will need the implementation of measures to enhance pay equity and facilitate career progression, alongside the development of targeted policies for women (Abdul Rahman, 2020).

3. Human resources management relies on current information technologies to effectively meet the organization's goals via the use of plans and data. Management should possess a fundamental knowledge foundation that relies on digital services. Currently, the primary difficulty encountered by many major firms is their capacity to furnish management with important information that aids in making logical decisions concerning human resources. (Al-Hazzam, 2016).

4. **Changing values and trends:** There is no doubt that the great successes achieved by companies are the result of management’s interest in values, and it is its responsibility to develop a plan capable of exploiting these values and trends (loyalty, commitment, etc.), in order to achieve the set goals, especially with The phenomenon of globalization and its effects on management and business, as human resources management has come to deal with individuals of multiple cultures, languages, and religions, which increases the difficulty of the challenge. Therefore, what is required here is for human resources management to develop an appropriate strategy that takes into account all these differences in values and attitudes between individuals. (Multaf, 2016).

2. **Returns and financial compensation for workers:** The inability of some establishments to pay increased wages to workers may lead to not waiting at work and searching for additional work outside of official work. Thus, the human resources department finds difficulty due to its inability to pay higher wages to workers and motivate them to make great efforts. (Bin Arama, 2018).

**The fourth section: The field framework of the study**

Methodological procedures for the field study

This section outlines the methodological methods and procedures for conducting the field study, specifically focusing on how the population and sample of the study will be addressed. The discussion will also cover the design of the study tool and the specific data collection instrument employed.

**First: the study population and sample**

The study population consists of all people who work in the public administrations of the Salah al-Din Governorate Health Department. Their number is about (350) people, and they constitute a total of directors, department heads, divisional officials, and employees in this department. They have extensive professional experience in their field of work, and are considered an influential group, which helps in giving accurate scientific results. This municipality was chosen as part of a study to assess the extent to which information and communication technology improves the effectiveness of human resources in public administrations within the area Salah al-Din Health Department. The researcher chose a deliberate sample from the population under investigation. Prior to commencing the analysis, the researcher considered the potential occurrence of non-retrieval or neglect of a certain number of questionnaires by The sample used for the study.

**Table 1: Distribution of the study sample**

<table>
<thead>
<tr>
<th></th>
<th>Boss</th>
<th>Head of the Department</th>
<th>Division official</th>
<th>Employee</th>
<th>The audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>30</td>
<td>70</td>
<td>50</td>
<td>200</td>
<td>350</td>
</tr>
<tr>
<td>The number</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>the total</td>
</tr>
</tbody>
</table>

**Second: The method of collecting data**

The researcher employed the survey method by means of a questionnaire to gather data in this study. The questionnaire was created and separated into two sections:

- The first section: contains demographic data in terms of (gender, educational attainment, years of experience, job level)
- The second section: contains measures of the extent to which information and communication technology contributes to improving the performance of human resources.

The study sample's responses about the impact of information and communication technology on human resources performance were evaluated using a five-point Likert scale. Each degree of the scale was assigned a numerical value to streamline the processing procedure.

**Table 2: Five-point Likert scale**

<table>
<thead>
<tr>
<th>I totally agree</th>
<th>I agree</th>
<th>Neutral</th>
<th>I do not agree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Third: Data analysis Methods
The SPSS 26 program was used in the process of transcribing and statistical analysis of the data and testing the study hypotheses, as it included the following statistical methods:
1. Cronbach’s Alpha coefficient in order to test the stability of the study tool.
2. Frequencies and percentages in order to display the characteristics of the sample and determine the extent of its members’ agreement with the questionnaire statements.
3. Arithmetic means and standard deviations to determine the trends in the sample members’ answers.
4. One-Sample Wilcoxon Signed Rank Test to verify hypotheses.

Fourth: Testing the stability of the study tool
The stability of the study tool (questionnaire) was confirmed, which means that this tool is stable and does not contradict itself, that is, its ability to obtain the same results if it were redistributed to the same sample under the same conditions. Cronbach’s alpha coefficient was calculated to measure the reliability of the questionnaire statements, as shown in Table No. (3). It is noted in Table No. (3) that the Cronbach’s alpha coefficient of reliability for the study variables is greater than 0.8, which means that the measurement tool for each of the study variables has stability with regard to the study sample. Therefore, the questionnaire can be relied upon to measure the studied variables due to its ability to give consistent results.

Table 3: Reliability test for the study variables using Cronbach’s alpha

<table>
<thead>
<tr>
<th>Cronbach's alpha</th>
<th>Number of statements</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.884</td>
<td>5</td>
<td>Total phrases “application of information and communication technology”</td>
</tr>
<tr>
<td>0.905</td>
<td>5</td>
<td>Total phrases “Using information and communication system programs”</td>
</tr>
<tr>
<td>0.893</td>
<td>5</td>
<td>The sum of the phrases “adequacy of the information of the system used”</td>
</tr>
<tr>
<td>0.848</td>
<td>5</td>
<td>Total phrases “training in information and communication technology”</td>
</tr>
<tr>
<td>0.920</td>
<td>20</td>
<td>Total questionnaire statements</td>
</tr>
</tbody>
</table>

Fifth: Results of the questionnaire analysis according to demographic variables. The distribution of sample members according to demographic variables was as shown in Table No. (4), where the distribution of respondents according to the gender variable was 96 females and 254 males. As for the number of respondents held a diploma, and 16 respondents held a doctorate.

Table 4: Characteristics of the study sample according to demographic variables

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Repetition</th>
<th>Category</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>72.6%</td>
<td>254</td>
<td>Male</td>
<td>Gender</td>
</tr>
<tr>
<td>27.4%</td>
<td>96</td>
<td>Females</td>
<td>Educational attainment</td>
</tr>
<tr>
<td>54.3%</td>
<td>190</td>
<td>Bachelor’s</td>
<td>Years of Experience</td>
</tr>
<tr>
<td>30.0%</td>
<td>105</td>
<td>Master’s</td>
<td></td>
</tr>
<tr>
<td>4.6%</td>
<td>16</td>
<td>Ph.D</td>
<td></td>
</tr>
<tr>
<td>11.1%</td>
<td>39</td>
<td>Diploma</td>
<td></td>
</tr>
<tr>
<td>21.4%</td>
<td>75</td>
<td>From 1 to 5 years</td>
<td></td>
</tr>
<tr>
<td>26.0%</td>
<td>91</td>
<td>From 5 years to 10 years</td>
<td></td>
</tr>
<tr>
<td>52.6%</td>
<td>184</td>
<td>More than 10 years</td>
<td></td>
</tr>
<tr>
<td>5.1%</td>
<td>18</td>
<td>Boss</td>
<td></td>
</tr>
<tr>
<td>21.4%</td>
<td>75</td>
<td>Head of the Department</td>
<td></td>
</tr>
<tr>
<td>9.7%</td>
<td>34</td>
<td>Division official</td>
<td></td>
</tr>
<tr>
<td>63.7%</td>
<td>223</td>
<td>Employee</td>
<td></td>
</tr>
</tbody>
</table>

The distribution of the variable number of years of experience for the category (more than 10 years) had the most experience among the respondents, as their number was 184 respondents, followed by the category (from 5 to 10 years) of experience, with the number of respondents being 91 respondents. The category (from one to five years) of experience comes in last place with a number of 75 respondents. The distribution of the sample members was according to the fourth variable (job level). The category (manager) was the lowest among the other categories for the same variable, with a number of 18 respondents, followed by the category (division official) with a number of 34 respondents, then the category (department head) with a number of 75 respondents. Then the category (employee) is the largest among them, with a number of 223 respondents. The study also showed the following results:

Gender: The results of the study indicate that the number of females reached 96, meaning 27.4% of the study sample are female, and the number of males reached 254, meaning 72.6% of the study sample. Which measures the high percentage of male participation in the study sample.

Educational attainment: As for educational attainment, 54.3% of the study sample held bachelor’s degrees, followed by master’s holders at 30%, then diploma holders at 11.1%. Doctorate holders come in last place at 4.6%. The results of the study indicate that 52.6% of the study sample members have years of experience (more than 10 years), which is the highest compared to other categories, followed by the years of experience category (from 5 years to 10 years) with 26%. The category (from one to five years) of experience comes in last place with a rate of 21.4%.
Job level: The results of the study indicate that 63.7% of the study sample members are in the employee category, which is the highest compared to other categories, followed by the department head category with a rate of 21.4%. Then followed by the category of divisional officer, with a rate of 9.7%. The manager category comes in last place with 5.1%.

Dimensions of information technology
First: Improving the performance of human resources through the application of information and communication technology
Table No. (5) and Table No. (6) display the extent of the sample members’ agreement with the statements of the first paragraph, “Improving the performance of human resources through the application of information and communication technology,” according to the frequencies and percentages of the first paragraph.

From Table No. (6), we note that the majority of the sample agrees (strongly agree) with all the statements of the first paragraph that include Enhancing the efficiency of human resources by implementing information and communication technologies.

From Table No. (6), we note that the majority of the sample agrees (strongly agree) with all the statements of the first paragraph that include Enhancing the efficiency of human resources by implementing information and communication technologies.

Table 5: The extent of the sample’s agreement with the statements of the first paragraph according to frequencies and percentages

<table>
<thead>
<tr>
<th>I totally agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>I do not agree</th>
<th>Strongly Disagree</th>
<th>Phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ratio</td>
<td>Repetition</td>
<td>The ratio</td>
<td>Repetition</td>
<td>The ratio</td>
<td>Repetition</td>
</tr>
<tr>
<td>76.6%</td>
<td>268</td>
<td>22.6%</td>
<td>79</td>
<td>0.6%</td>
<td>2</td>
</tr>
<tr>
<td>78.9%</td>
<td>276</td>
<td>20.6%</td>
<td>72</td>
<td>0.6%</td>
<td>2</td>
</tr>
<tr>
<td>77.7%</td>
<td>272</td>
<td>20.6%</td>
<td>72</td>
<td>1.1%</td>
<td>4</td>
</tr>
<tr>
<td>77.7%</td>
<td>272</td>
<td>21.4%</td>
<td>75</td>
<td>0.6%</td>
<td>2</td>
</tr>
<tr>
<td>78.9%</td>
<td>276</td>
<td>20.6%</td>
<td>72</td>
<td>0.6%</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 6: The extent of sample members’ agreement with the statements of the first paragraph according to the arithmetic mean and standard deviation

<table>
<thead>
<tr>
<th>Direction</th>
<th>Standard deviation</th>
<th>Arithmetic mean</th>
<th>Phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>I totally agree</td>
<td>.4830</td>
<td>4.75</td>
<td>1. Localization of electronic business is an administrative approach that improves the performance of human resources</td>
</tr>
<tr>
<td>I totally agree</td>
<td>.4270</td>
<td>4.78</td>
<td>2. The Ministry plans to generalize the use of information and communication technology to improve the performance of human resources</td>
</tr>
<tr>
<td>I totally agree</td>
<td>.5120</td>
<td>4.75</td>
<td>3. The Ministry’s computers are sufficient to facilitate the work of human resources</td>
</tr>
<tr>
<td>I totally agree</td>
<td>.4570</td>
<td>4.77</td>
<td>4. The Ministry is keen to adopt all new means of information and communication technology to achieve excellence in human resources performance</td>
</tr>
<tr>
<td>I totally agree</td>
<td>.4270</td>
<td>4.78</td>
<td>5. The Ministry aspires to expand its websites to facilitate the work of human resources</td>
</tr>
<tr>
<td>I totally agree</td>
<td>.3820</td>
<td>4.77</td>
<td>6. Average of the phrases of the first paragraph: “Improving the performance of human resources through the application of information and communication technology”</td>
</tr>
</tbody>
</table>

From Table No. (6), we note that the general arithmetic mean for the first paragraph is equal to (4.77). It follows the trend of (strongly agree), which indicates that most of the sample members strongly agree that the application of information and communication technology leads to improving the performance of human resources. Analysis of Tables No. 5 and No. 6 indicates that the sample members agree to “improving the performance of human resources through the application of information and communications technology.” This is evidence of strengthening and improving management in the Salah al-Din Health Department. The majority of the research sample members in Table No. 6 also found that the application of information and communications technology leads to improving the performance of human resources in the Salah al-Din Health Department.

Second: Improving the performance of human resources through the programs used in the information and communication system
Table No. (7) and Table No. (8) display the extent of the sample members’ agreement with the statements of the second paragraph, “Improving the performance of human resources through the programs used in the information and communication system,” according to the frequencies and percentages of the second paragraph.

From Table No. (8), we note that the majority of the sample agrees (strongly agree) with all the statements of the second paragraph that include Enhancing the efficiency of human resources by implementing information and communication technologies.

From Table No. (8), we note that the majority of the sample agrees (strongly agree) with all the statements of the second paragraph that include Enhancing the efficiency of human resources by implementing information and communication technologies.

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This study presents the findings of testing the research hypotheses related to the application of information and communication technology, the utilization of information and communication system programs, the appropriateness of the information in the system used, and the training on information and communication technology. The study also examines the impact of these factors on enhancing the performance of human resources in public administrations within the Department of Health. Salah Al-Din, the researcher employed inferential statistical analysis. The first objective is to enhance the efficiency of human resources by implementing information and communication technologies. To evaluate the impact of implementing information and communication technologies on enhancing human resources’ performance, the nonparametric test was used: One-Sample Wilcoxon Signed Rank Test, as the answers to the first paragraph do not follow a normal distribution. Therefore, the overall median of the first item was compared with the median of the five-point Likert scale, which equals the value of “3”. For more details, see Figure No. (7).

From Table No. (7), we notice that the majority of the sample agrees (strongly agree) with all the statements of the second paragraph that include improving the performance of human resources through the programs used in the information and communication system.

**Table 7:** The extent of the sample’s agreement with the statements of the second paragraph according to frequencies and percentages

<table>
<thead>
<tr>
<th>Phrase</th>
<th>I totally agree</th>
<th>I agree</th>
<th>Neutral</th>
<th>I do not agree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The information and communication system provides the programs needed by the human resources department</td>
<td>80.9%</td>
<td>283</td>
<td>18%</td>
<td>63</td>
<td>1.1%</td>
</tr>
<tr>
<td>The Ministry has an electronic network that facilitates the flow of information among workers to activate human resources management</td>
<td>79.1%</td>
<td>277</td>
<td>18.9%</td>
<td>66</td>
<td>1.7%</td>
</tr>
<tr>
<td>Human resources carry out their work through information and communication technologies and software</td>
<td>76.9%</td>
<td>269</td>
<td>22%</td>
<td>77</td>
<td>0.9%</td>
</tr>
<tr>
<td>Human Resources possesses the computer programs necessary for administrative business applications</td>
<td>80.9%</td>
<td>283</td>
<td>18.6%</td>
<td>65</td>
<td>0.3%</td>
</tr>
<tr>
<td>The Ministry contributes to training workers to use electronic programs needed by human resources</td>
<td>78.9%</td>
<td>276</td>
<td>20.6%</td>
<td>72</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

From Table No. (8), we note that the general arithmetic mean for the second paragraph is equal to (4.78). (Strongly agree), which indicates that most of the sample members strongly agree that the programs used in the information and communication system contribute to improving human resources performance.

Table No. 7 and No. 8 indicate that most of the sample members strongly agree that “the programs used in information and communication systems contribute to improving the performance of human resources. This is an indication of developing human competencies in using information systems and securing the programs and electronic networks that management needs.” To activate human resources management.

**Hypothesis testing results**

This study presents the findings of testing the research hypotheses related to the application of information and communication technology, the utilization of information and communication system programs, the appropriateness of

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Table 9: One-Sample Wilcoxon Signed Rank Test for the first paragraph

<table>
<thead>
<tr>
<th>Statistics</th>
<th>first paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Valid 350</td>
</tr>
<tr>
<td></td>
<td>Missing 0</td>
</tr>
<tr>
<td>Median</td>
<td>5.0000</td>
</tr>
</tbody>
</table>

From Table No. 9, we note that the value of statistical significance. It is equal to (0.000), which is less than (0.05), and the overall median of the first paragraph is equal to “5”, which is higher than the median of the five-point Likert scale, which equals the value of “3” (the difference is equal to “2”). Therefore, it can be said that the application of information and communication technology improves the performance of human resources, at a significance level of (0.05).

Second: Improving the performance of human resources through the programs used in the information and communication system

To test the extent to which the programs used in the information and communication system contribute to improving the performance of human resources, the nonparametric test was used: One-Sample Wilcoxon Signed Rank Test, since the answers to the second paragraph do not follow a normal distribution. Therefore, the overall median of the second item was compared with the median of the five-point Likert scale, which equals the value of “3”.

Table 10: One-Sample Wilcoxon Signed Rank Test for the second paragraph

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Second paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Valid 350</td>
</tr>
<tr>
<td></td>
<td>Missing 0</td>
</tr>
<tr>
<td>Median</td>
<td>5.0000</td>
</tr>
</tbody>
</table>

From Table No. (10), we note that the value of statistical significance. It is equal to (0.000), which is less than (0.05), and the general median of the second paragraph is equal to “5”, which is higher than the median of the five-point Likert scale, which is equal to “3” (the difference is equal to “2”). Therefore, The utilization of programs in the information and communication system enhances the efficiency of human resources, with a statistical significance level of 0.05.

Improving human resources performance by adapting the system information used.

In order to assess the impact of the information system's appropriateness on human resources performance, a nonparametric test was employed: One-Sample Wilcoxon Signed Rank Test, since the answers to the third paragraph do not follow a normal distribution. Therefore, the overall median of the third item was compared with the median of the five-point Likert scale, which equals the value of “3”.
Table 11: One-Sample Wilcoxon Signed Rank Test for the third paragraph

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Third paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>350</td>
</tr>
<tr>
<td>Valid</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
</tr>
<tr>
<td>Median</td>
<td>5.0000</td>
</tr>
</tbody>
</table>

From Table No. (11), we note that the value of statistical significance. It is equal to (0.000), which is less than (0.05), and the overall median of the third paragraph is equal to “5”, which is higher than the median of the five-point Likert scale, which is equal to “3” (the difference is equal to “2”). Therefore, it can be said that the suitability of the information of the system used improves the performance of human resources, at a significance level. (0.05)

Conclusions and recommendations
1. The utilization of information and communications technology in human resources has positively impacted performance. Factors such as leadership, creativity, and diversity have also played a role in this improvement. Institutions and organizations have greatly benefited from the use of technology, resulting in enhanced performance. And its level of production.
2. Improving the communication process inside and outside the organization has led to an increase in the flow of information and its exchange in a way that led to new alliances. Business partnerships increased in a short record period, which helped organizations market their production and services and establish new partnerships in most parts of the world. Thanks to all of this, To the role of information and communications technology in managing these processes
3. One consequence of the interaction between information and communications technology and human resource performance is the emergence of a new pattern centered around knowledge. This pattern serves as a catalyst for enhancing the capabilities and performance of the human resource through a close connection with training. This phenomenon is evident in the Salah al-Din Health Department, which has a forward-looking perspective that presents numerous challenges and demands. By further embracing digitalization across all departments and divisions.
4. The value is negative four. The study successfully assessed the influence of information and communications technology on the performance of human resources in this department, and this is what was reflected in the real picture in the adoption of information and communications technologies, and this is clear evidence of the health department’s ability to compete through the information available to it that contributed to decision-making. Appropriate at the appropriate time and place.

Recommendations
Within the framework of the results reached, some suggestions and recommendations can be presented that would contribute to improving the performance of human resources in the Salah al-Din Health Department.
1. Paying attention to the cognitive aspect, especially with regard to information and communication technology, to keep pace with technological developments.

Especially in public administrations, specifically the Salah al-Din Health Department.
2. Focus on the requirements of applying information and communications technology in terms of organizational culture and organizational structure to save time and effort for the aforementioned department in improving employee performance.
3. Focus more on selecting those with university and postgraduate degrees and those specialized in the field of information and communication technology, and training current employees to use technology, including devices and programs.
4. Encouraging workers and employees to be creative and innovative through rewards and motivation, providing a suitable atmosphere for this, and exploiting their abilities and skills in order to improve their performance.

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