

The Application Reality Of Artificial Intelligence And Its Impact On The Administrative Human Resources Processes

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Abstract

The study aimed to identify the reality of the application of artificial intelligence and its impact on the administrative processes of human resources in private companies, and dealt with four dimensions of artificial intelligence (electronic protection, system capacity, availability of experts, and training and development processes on the system). In addition, three dimensions of administrative processes: speed of performance, quality of performance, and accuracy of performance. The study population consisted of all administrators in private companies in the main departments. The researchers relied on the comprehensive survey method to study and analyze the study community, and the questionnaire was used as a means to obtain data. The questionnaire was distributed to a sample of Mona from different administrative levels for each company, and the number of distributed questionnaires was 160. Of these, 155 were retrieved from the total number of distributed questionnaires, of which 150 were valid for analysis. The researchers used a number of statistical methods, including descriptive methods, correlation coefficients, and multiple linear regression tests. The results revealed a statistically significant effect of artificial intelligence on administrative processes at the significance level (0.05).

Keywords: artificial intelligence, administrative human resources, human resources processes.

Introduction:

Scientific developments, the information and communications revolution and its advanced and renewable applications in the third decade of the third millennium of the twenty-first century have brought about a different administrative reality, as technologies are witnessing radical and profound transformations that have increased the speed of the communication process, as Ibrahim (2010) indicated that technical obstacles are no longer an obstacle to the evolutionary tide of this service. The information revolution, with its enormous power and ability, has become the main nerve for all possible changes in various aspects of life in this era. In an effort to take advantage of the advantages of these modern

administrations in all their fields, with the aim of increasing the efficiency of the work of departments and organizations to improve their performance.

Given the need of different organizations for modern technologies in light of this development and technological progress, administrative trends are gradually shifting from traditional administrations to modern administrations characterized by technology and artificial intelligence (Al-Alameh, 2003). Which was defined by Grewal (2014: 9) as a mechanical simulation system that is based on collecting knowledge and information related to various sectors in the world and working to process and

publish it to benefit from it in the form of practical intelligence.

As for the ability to link this information with the methods of using artificial intelligence, it is a basic pillar in the development of administrative systems in establishments, as there is a "growing" awareness of the importance of an effective information system to provide accurate and timely information to serve the information needs of senior management. One of the main problems facing today's top management is a problem with the huge volume of information being passed on to it (Yaghi, 2003).

Here, the process of selecting the required information becomes an uneasy process, which calls for solving this problem through planning and good control over operations, by making effective decisions based on a continuous flow of good-quality and constantly updated information. Human resource management has undergone many changes over the past 20 years, giving it a more important role in organizations nowadays. Where in the past the human resource department was more concerned with processing payroll, sending holiday gifts to employees, arranging company trips, and making sure they correctly filled out the forms-in other words, it was a management role rather than a critical strategic role in the success of the organization (Al-Zoubi, 2014).

Despite the numerous research efforts on the subject of administrative processes for human resources in the Arab world and globally. The Arab attempts in particular still need great enrichment due to the importance of this topic and the importance of technological and administrative changes that are highly advanced and based on the use of the method of artificial intelligence, which calls for the need to follow up on these issues. Changes, especially in the field of human resources administrative processes. In addition, human resources administrative processes depend on psychological factors that are governed by many factors that are constantly changing, and these factors may be easy to control and may not be possible. The aspects of the problem can be addressed by answering the question. The following main What is the reality of the application of artificial intelligence and its

impact on the administrative processes of human resources in private companies?

Literature Review

The world has witnessed many rapid changes in various fields in conjunction with the emergence of the scientific and industrial revolution, and one of these areas is the technological and scientific development, which has been greatly reflected on the lives of individuals and society positively and negatively. The Industrial Revolution contributed to the production of artificial intelligence, which has become an integral part of Our life, and life flourished in all its fields (Badaro, Ibanez & Agüero, 2013).

Artificial intelligence

The concept of artificial intelligence (AI) refers to the way in which human intelligence capabilities are simulated, and it is a part of computer science that deals with the design process of intelligent systems, which shows a set of characteristics that are linked to intelligence related to many human behaviors (Badaro, Ibanez & Agüero, 2013). As defined by Ocana-Fernandez, Valenzuela-Fernandez, Garro-Aburto, (2019) as an aspect of computer science that provides a variety of methods, techniques, and tools to create models and solutions to problems by simulating the behavior of individuals.

The application of artificial intelligence systems is characterized by the reduction of human errors, due to its reliance on modern digital programs and systems, through which a huge amount of data and inputs are entered, analyzed, and provides accurate outputs based on a set of criteria set by the Human Resources Department, in addition to its important role in Providing direct feedback, which helps to modify decisions and plans to ensure that efforts are directed towards completing projects effectively and at the lowest costs and efforts (Nadimpalli, 2017).

Many applications of artificial intelligence systems help project managers to deal with the difficulties and obstacles faced by companies in light of the intense competition between them and other companies. In addition to

the above, the use of artificial intelligence systems helps to facilitate administrative, organizational, and production processes and procedures to ensure a high level of efficiency and productivity of institutional performance, thus reducing complications in procedures and achieving high levels of quality (Munir, 2019).

The first type is weak artificial intelligence, which focuses on a set of specific and narrow tasks such as a self-driving car, and the other type is strong artificial intelligence, which is known as artificial general intelligence, and this type is able to perform most of the cognitive functions that a human being may have, in addition to applying intelligence to more than one problem (Ma & Siau, 2018).

Despite this, the use of artificial intelligence may lead to misleading results resulting from providing incorrect data, which may lead to many problems, whether in the health sector or business. The expansion of the use of artificial intelligence may also lead to the dispensation of the human element, which may lead to an increase in the level of unemployment as many individuals believe that human intelligence alone is insufficient and should work to replace it with machines and computers (Boutilier, Caragiannis, Haber, Lu, Procaccia & Sheffet, 2015).

Human-machine AI has the potential to change the way learning is learned and information is stored and accessed, thereby improving human memory. With regard to the education process, AI can be considered a viable solution that provides a new perspective on the dynamics of students' learning regardless of their level, resulting from the virtual interaction organized by AI, which facilitates the learning process. This is because support mechanisms will be available, when necessary, regardless of when and where the student is (Ocana-Fernandez, Valenzuela-Fernandez, Garro-Aburto, 2019; Popenici & Kerr, 2017).

Human Resource Management

Human resources in organizations represent one of the most important resources and one of the most important assets owned by the institution. It is not possible to achieve the objectives of the

institution without these resources, for the institution without individuals is nothing but a group of fixed assets that can only be produced with the support of the workforce. In general, most researchers agreed that there are five main functions that managers perform, and these functions are: planning, organizing, forming, leading, and controlling. In general, these functions represent the administrative process, and in the field of human resources study, the focus is on one of these functions, which is formation or what is called human resource management (Al-Khatib, 2012).

The human resources management has played and still plays several roles in the life of institutions, as the functions entrusted to this department developed with the development of the needs that accompanied the establishment of institutions, and gradually grew to accompany in its turn the tremendous historical development created by the various sciences, foremost of which is the administrative sciences. And the place of launch of human resources management is not known exactly, but with the beginning of the year 1800 AD or shortly before, several issues emerged that fall within the responsibility of human resources management, and they are under discussion and application in England, France, the United States of America and other countries (Hariri, 2014).

The human resource department is defined as the administration that believes that individuals working at various levels or activities of the institution are the most important resources and its duty is to provide them with all the means that enable them to carry out their work for their own and their interests and to monitor them and watch over them constantly to ensure their success and the success of the public (Hariri, 2014).

The importance of human resource management lies in that it (Al-Zoubi, 2014) is concerned with the main resources in the organization, which are individuals. There is no institution without human resource management. It also develops the skills of individuals working in the organization, and makes appropriate plans for training. In addition, it studies the problems of

individuals and addresses them, and selects the appropriate individuals to fill jobs.

HR administrative processes

Administrative processes are referred to as the specific activities carried out by administrators to facilitate the functioning of institutions, companies, or universities, and thus achieve the goals of the institution as represented by prosperity, growth, development, and improvement of their outputs. Administrative processes also include education, planning, guidance, measurement, communication, and decision-making (Sun, 2019).

Gonçalves & de Lima Albuquerque (2019) also emphasized administrative processes as the strategies and means that bring about fundamental change through the development of a well-thought-out and organized scheme designed by administrative bodies focusing on the core competencies of the institution, company, or concerned entity, with the aim of improving the development of specific and required outputs, as managers perform many key functions in administrative processes, such as planning, organizing, directing, and controlling.

Previous studies

Al-Azzawi (2016) conducted a study that aimed to identify the relationship between the research variables, the extent to which the administrative process re-engineering can be applied in the company in question, and the level of deportation of citizenship behavior. The study reached a set of results, the most important of which is the existence of a significant correlation between the re-engineering of administrative processes and the behavior of citizenship, as well as the existence of a significant effect of the re-engineering of administrative processes on the citizenship behavior of the company in question. and educational for the purpose of improving and familiarizing workers with the importance of the reengineering method and the importance of volunteer work and their benefits through the development of necessary regulations and instructions to translate this into its policies and programs related to its human resources.

Kamel (2016) conducted a study aimed at designing and building an electronic educational system based on artificial intelligence techniques, and measuring its effectiveness on developing some statistical analysis skills. The number of (60) male and female students, they were divided into two groups, a control group of (30) male and female students, and an experimental group of (30) male and female students. The results confirmed the effectiveness of the proposed smart electronic educational system in developing the skills of statistical analysis of the research sample.

Al-Shawabkeh (2017) conducted a study aimed at identifying the role of artificial intelligence applications "expert systems" in making administrative decisions in Saudi banks. To achieve the objectives of the study, the descriptive approach was used. The researcher used a questionnaire consisting of (28) items after verifying its validity and reliability, and it was distributed to a sample of (83) employees. The results of the study showed that the degree of all dimensions of the independent variable of artificial intelligence applications "expert systems", the suitability of the system, training and development, the smart program used, and the security system, was high.

Al-Yajzi (2019) conducted a study aimed at identifying the use of artificial intelligence applications in supporting university education in the Kingdom of Saudi Arabia. On the inductive approach using the descriptive analytical method through the theoretical analysis of artificial intelligence, the results concluded that the use of artificial intelligence applications in supporting university education in the Kingdom of Saudi Arabia was moderately.

Kuo & Huang (Kuo & Huang, 2018) conducted in Tainan aimed to reveal the extent of the application of green energy programs in energy management systems through an artificial intelligence-based solar radiation prediction model. The experimental approach was used to achieve the objectives of the study. The results indicated that the level of application of the green energy program in energy management systems through the prediction model of solar radiation based on artificial intelligence was high, and the

results indicated that the application of the green energy program in energy management systems through the artificial intelligence-based solar radiation prediction model positively affects the ability of institutions to perform various administrative tasks and improve their outcomes.

Zhang (Chang, 2019) conducted a study in China aimed at evaluating the performance of AI-based environmental management systems. The study sample consisted of 36 companies. To achieve the objectives of the study, the quantitative methodology based on the questionnaire and the qualitative methodology derived from the interview were used. The results indicated that the level of performance of environmental management systems based on artificial intelligence was effective and qualified in performing various administrative tasks, as the size of their companies expanded and they were able to improve their competencies.

While Zhao, Chen, Liu, Zhang and Copland (2019) conducted a study in China that aimed to reveal the impact of using online artificial intelligence-based teaching systems, a critical descriptive approach was used to achieve the goal of the study. Teaching Systems Analysis is a In order to analyze studies that used online AI-based teaching systems, the results indicated that the use of online AI-based teaching systems had a positive impact on students' academic achievement.

Bargarai, Abdulazeez, Tiryaki & Zeebari (2020) conducted a study in Iraq that aimed to identify the impact of the management of wireless communication systems using software-defined radio based on artificial intelligence on administrative processes. According to the findings, the use of various technologies based on the use of artificial intelligence improves a company's ability to perform various administrative tasks.

Methodology

The study population consisted of all private Jordanian companies, and the comprehensive survey method was adopted for the purposes of

this study. The study sample consisted of: company managers, their deputies, department heads, and directors of human resources management working in Jordanian industrial companies for the year (2020/2021). The necessary data and information for the purposes of the study were taken from the study sample members through the distribution of forms and the number of items per unit inspection (160) individuals. The study relied on the questionnaire as a tool for the study. To achieve the objectives of the study, the researcher used the descriptive analytical method for its suitability for this type of study due to the ease of its application in collecting data from a large number of members of the sample community, in addition to using the statistical methods required by the study: pre-tests such as (KS), descriptive statistics such as arithmetic means, standard deviations, frequencies, relative importance, and multiple regression. The SPSS system was used to analyze the data and determine the effect of independent factors on the dependent variable.

The results of the statistical analysis of the study and testing the hypothesis of the study

This section reviews the results of the statistical analysis of the responses of the study sample members to the variables that were adopted by presenting the primary statistical indicators for their answers through the arithmetic averages and standard deviations of all study variables and their relative importance.

First: The results of the first question, which states: What is the level of artificial intelligence application in private companies?

To describe the level of application of artificial intelligence (electronic protection, system capacity, availability of experts, process of training and development of the system) in Jordanian private companies, the researcher resorted to extracting the arithmetic averages of the answers of the study sample members for each of the dimensions of the field of artificial intelligence, as shown in the following tables:

Table (1)

Arithmetic averages of the responses of the sample members to the dimensions of the field of artificial intelligence, arranged in descending order.

NO.	The dimension	Arithmetic mean	Evaluation score	Rank
4	electronic protection	3.85	High	1
1	System capacity	3.84	High	2
3	Availability of experts	3.83	High	3
2	System training and development process	3.79	High	4
Areas of artificial intelligence as a whole		3.82	High	

It appears from Table No. (1) that the arithmetic averages of the responses of the study sample to the dimensions of artificial intelligence ranged between (3.79-3.85) with a high evaluation degree for all dimensions. Electronic ranked first with an arithmetic average of (3.85), followed by the dimension of "system capability" with an arithmetic average of (3.84), and in the third rank came after "Availability of experts" with an arithmetic average of (3.83), and came in the fourth and final rank after "training and development process on the system" with an arithmetic average (3.79), and the arithmetic average for the field as a whole was (3.82) with a high evaluation degree, and this indicates that the level of artificial intelligence in Jordanian private

companies was high from the point of view of the study sample members.

Second: The results of the second study question, which states: What is the level of administrative processes for human resources in private companies?

To describe a level on administrative processes (speed, quality, accuracy) in Jordanian private companies, the researcher resorted to extracting the arithmetic averages of the answers of the study sample members for each dimension of the field of administrative operations, as shown in the following tables:

Table (2) The arithmetic averages of the responses of the sample members to the dimensions of the field of administrative operations are arranged in descending order

NO.	The dimension	Arithmetic mean	evaluation score	Rank
2	the quality	3.83	High	1
1	the speed	3.80	High	2
3	Precision	3.64	medium	3
Administrative processes as a whole		3.76	High	

It appears from Table No. (2) that the arithmetic averages of the responses of the study sample members about the dimensions of administrative processes ranged between (3.64-

3.83), and the results showed that the order of the dimensions according to the arithmetic averages came as follows: The dimension of "quality" came in the first place with an arithmetic average

(3.83), followed by the dimension of "speed" with an arithmetic average (3.80), and in the third and last place came the dimension of "accuracy" with an arithmetic mean (3.64), and the arithmetic mean of the field as a whole was (3.76) with a high evaluation degree, and this indicates that the level of administrative operations in companies The Jordanian industrial sector was high from the point of view of the study sample members.

The hypothesis of the study: There is no statistically significant effect at the level (α

≤ 0.05) of artificial intelligence represented in re-designing human resource management processes, building work teams, work analysis, redesigning responsibilities in the administrative processes of Jordanian private companies.

To verify the validity of this hypothesis, a multiple regression equation was applied to study the impact of artificial intelligence on administrative processes in Jordanian private companies, and the results are presented below.

Regression

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Redesigning responsibilities, team building and development, work analysis, redesigning human resource management processes ^b	.	Enter

a. Dependent Variable: Job performance as a whole

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.763 ^a	.582	.570	.24755

a. Predictors: (Constant), Redesign responsibilities, team building and development, work analysis, redesign of human resource management processes

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.358	4	3.090	50.414	.000 ^b
	Residual	8.886	145	.061		
	Total	21.244	149			

a. Dependent Variable: Job performance as a whole

b. Predictors: (Constant), Redesign responsibilities, team building and development, work analysis, redesign of human resource management processes

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

	(Constant)	2.032	.130		15.674	.000
	Redesigning human resource management processes	.202	.070	.366	2.894	.004
1	Team building and development	.172	.075	.306	2.278	.024
	work analysis	-.007-	.066	-.012-	-.108-	.914
	Redesign responsibilities	.086	.063	.145	1.365	.174

a. Dependent Variable: Job performance as a whole

The previous results show that there is a statistically significant effect at the significance level ($\alpha \leq 0.05$) for the dimensions of artificial intelligence on administrative processes, as the value of the correlation coefficient (R) reached (0.763), which is a statistically significant value and indicates the degree of statistically significant correlation between the independent variables and the dependent variable. And the value of (R-square) was (0.582), and the value of the adjusted determination coefficient (Adjusted R Square) was (0.570), which are statistically significant values that explain the ability of the dimensions of artificial intelligence to influence administrative processes in the sense that the dimensions of artificial intelligence explain its value (58%). From the change in the administrative processes, the test value was (F) (50.414) with a statistical significance (0.00), which is a statistically significant value at the significance level ($\alpha \leq 0.05$), which indicates the existence of a discrepancy in the ability of the independent variables to influence the dependent variable, from the foregoing. The hypothesis is accepted in the established form.

Discussion

The study aimed to identify the reality of the application of artificial intelligence and its impact on the administrative processes of human resources in private companies, and with regard to the impact of each dimension of artificial intelligence individually on the administrative processes, the results showed a statistically significant effect at the level of significance ($\alpha \leq 0.05$). of electronic protection on administrative processes, where the value of (β , T) was (0.366,

2.894), respectively, which is a statistically significant value. There is a statistically significant effect at the significance level ($\alpha \leq 0.05$) for the system's ability to manage administrative operations, where the value of (β , T) reached (0.306, 2.278), respectively, which is a statistically significant value, and this result agrees with the study of each of Shawabkeh (2017), Kuo & Huang (2018), Chang (2019), and Bargarai, Abdulazeez, Tiryaki & Zeebaree, 2020. There is also a statistically significant effect at the significance level ($\alpha \leq 0.05$) for the availability of experts on administrative processes, where the value of (β , T) was (-0.012, -0.108), respectively, which is a non-statistically significant value. This result agrees with the study of Al-Azzawi (2016), the study by Kuo & Huang (2018), and Chang (2019). Finally, it found a statistically significant effect at the significance level ($\alpha \leq 0.05$) for the training and development process on the system on administrative processes, where the value of (β , T) reached (0.145, 1.365), respectively, which is a non-statistically significant value, and this result agrees with the study Shawabkeh (2017), and Kuo & Huang (2018).

Conclusion

Despite the numerous research efforts on the subject of administrative processes for human resources in the Arab world and globally, the Arab attempts in particular still need great enrichment due to the importance of this topic and the importance of technological and administrative changes that are highly advanced and based on the use of the method of artificial intelligence. That is why this study set out to identify the reality of the application of artificial

intelligence to the administrative processes of human resources in companies. The importance of this study lies in highlighting a very important topic. This study can contribute to enriching the theoretical aspect of research and studies that will deal with artificial intelligence and its impact on the administrative processes of human resources. The theoretical literature of the study may contribute to enriching the Arabic library in general and the Jordanian library in particular. The importance of this study also highlights its attempt to contribute to directing the attention of workers in private companies to the importance of employing artificial intelligence in private companies. It is also hoped that this study will benefit decision-makers in private companies by providing them with information about the reality of employing artificial intelligence to improve administrative processes for human resources. It may also benefit planners by providing them with some obstacles to applying artificial intelligence so that they can plan to overcome them. However, the study recommends reviewing administrative processes annually to achieve continuous improvement, which leads to achieving high quality and working to increase dependence entirely on the use of information and communication technology to reduce time and effort. And the necessity and consideration of the elements that contribute to the success of artificial intelligence in the administrative processes of human resources. Jordanian private companies must also invest and keep pace with the changes that occur in the field of information technology so that this positively affects the administrative operations and is reflected in the presence of services in the company.

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