

# The Role of Applying Artificial Intelligence Methods in Improving the Performance of Higher Education and Training Institutions

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## Abstract

The study aimed mainly to shed light on the role and importance of artificial intelligence in sports training and education institutions, which are provided by higher education institutions and bodies in general and institutes of science and technology for physical and sports activities in particular, and to work to develop and improve them in a way that suits their desires, and with the requirements of technological development, as well as reforms. The Ministry of Guardianship. This was done through a scientific study at the level of the physical education and sports institutes of the University of Algiers 03, Bouira, Khemis Miliana. The descriptive analytical method was used to suit the nature of the study. The questionnaire was also used as an effective tool for collecting data and information. The study sample amounted to 200 employees from the institutes of physical education and sports at the University of Algiers 03, Bouira, Khemis Miliana. They were selected in a simple random way. The program was also relied upon. Spss for statistical analysis. The results of the study showed that there is a major role for artificial intelligence in improving and developing the performance of institutions and higher education bodies, given that it has an effective role in improving competitiveness, increasing the volume of the institution's activities and meeting the needs of its active partners.

**Keywords:** *Artificial Intelligence, Performance Improvement, Higher Education, Physical Education and Sports Institutes.*

## 1. INTRODUCTION

The successive developments, rapid changes, and rapid progress in various fields, especially in light of globalization, information technology, and intense competition, and the emergence of many contemporary challenges (globalization of the economy, the spread of information technology, information networks, the Internet, the International Organization for Standardization (ISO), the World Trade Organization (GATT), etc.) have become a threat to the existence of government institutions and private organizations, whether economic or service organizations, regardless of their activities and forms, which has forced the latter to take a set of measures and procedures to confront these challenges and increasing complexities by adopting a conscious scientific approach to search and investigate the best ways that lead these organizations to invest effective human energies in consolidating performance with more efficient and effective flexibility, as it makes them capable of adapting, surviving, growing, and achieving excellence and success. One of the most administrative aspects aimed at achieving this transformation is comprehensive quality management, which has now become, thanks to the huge amount of information and communication technologies, a distinctive

feature of the data of modern human thought, especially since contemporary scientific management that relies on artificial intelligence applications, has contributed significantly to developing the structure of organizations in their various sectors.

Artificial intelligence is currently contributing to changing and defining the forms and methods by which business institutions interact with the outside world. Current statistics show that at least 30% of all organizations and companies active in various fields and active across the world will adopt approaches or one of the methods of artificial intelligence in their programs and business plans by the beginning of 2020. A group of recent studies have shown important data and information on this topic, including, for example : that more than 85% of customer interactions with the organizations they deal with, where artificial intelligence applications will be relied upon to implement various activities instead of the human element by the beginning of 2020.

Talking about artificial intelligence applications in the Algerian educational organization in general and higher education in particular requires research and careful study within the framework of what is known as the future of business before its urgent, in order to avoid the consequences of literal transfer and application not based on scientific rules, which incurs certain losses for the country at all levels and in various aspects of life. Based on the above, the current study attempts to analyze the extent of the application and importance of using artificial intelligence applications to achieve success and excellence at the local, regional and global levels, and the necessity of investing in it through the possibility of adopting it as a modern scientific strategy for managing higher education. The researcher chose the institutes of physical education and sports of the universities of (Algiers 3. Bouira. Khemis Miliana) as a field for conducting this study.

The researcher addressed this topic through a research plan that included an introduction, two chapters and a conclusion, at the theoretical and applied levels. The methods of using modern and advanced technological methods used by university bodies in providing services began in internal communication operations, in order to carry out the internal tasks of the organization, such as keeping records and data, but they were later used as means through which external communication and contact with partners dealing in this sector is carried out. This resulted in the expansion of the work of organizations in good training and the expansion of the individual's view of the importance of this method. The sector in the Arab community realized the value and advantages of using modern technological techniques in implementing various operations that enable it to increase its development and the quality of its training, and expand its investment base by building distinctive competitive applications. This applies to the training and education sector in the Arab community. Despite the circumstances that Algeria went through in some periods of crises and restrictions imposed on it, Algeria had to raise the technological level of its performance and provide the best technical services in all fields, especially the field of training and education, if it wanted to reach and compete with other countries in adopting modern approaches in using artificial intelligence and enhancing its development role, and for national organizations to be able to achieve technological superiority and demonstrate their efficiency in exploiting modern methods, and thus develop the beginnings of communication with users, and ways of providing services to them in order to ensure the continuation of dealing with them, and attracting other partners, with the aim of expanding the scope of its activity in providing its various services, and in order for it to be able to do so, it was necessary to adopt and absorb modern technology and advanced technologies in the field of training and education.

## 2. THE PROBLEM OF THE STUDY

Artificial intelligence is one of the systems and devices that simulate human intelligence to perform tasks and can improve itself based on the information it collects. It uses chatbots to understand the problems of partners and customers as quickly as possible to collect the necessary information and data, and then analyze these outputs to reach a solution to these problems and achieve complete satisfaction of the desires and needs of users with complete accuracy. This is what makes organizations always strive to improve and develop their performance in terms of the quality of education and training, which prompted them to increasingly find new and modern means and applications to be able to excel and advance. The problem of the study focused on investigating the extent of the application of artificial intelligence in sports education and training institutions, and the application of artificial intelligence in higher education has not been addressed by many researchers in many foreign and Arab countries, not from several aspects such as its basic concepts, the possibility of measuring it according to the approved international standards, the obstacles to its application, and the pillars on which it is built because the topic is new. However, the applications of artificial intelligence in the higher education system in Algeria as an administrative method are still not sufficiently circulated, except for what students receive from their professors in some universities in its purely theoretical form, so the researcher limited himself to studying one of the aspects The mission of managing the application of artificial intelligence in higher education, which is believed to be the first aspect to study before delving into other aspects, where the researcher took it upon himself to conduct this exploratory research, which will explore the actual justifications that call for proposing the adoption of such a new method in managing higher education, as well as determining the importance of providing the basic requirements to achieve the objectives of this application in the higher education sector, as seen by faculty members and based on some previous field studies conducted in some Arab countries, and theoretical frameworks related to the subject of artificial intelligence in higher education, and the researcher decided to conduct his research on a sample of physical education and sports institutes at the Algerian university. Specifically, the study problem was limited to answering the following questions:

## 3. GENERAL QUESTION

Does the application of artificial intelligence methods play a role in improving the quality of education and training in institutes of sciences and technologies of physical and sports activities?

### 3.1 Study questions :

- Does the application of artificial intelligence methods play a role in improving the quality of services in institutes of sciences and technologies of physical and sports activities?
- Does the application of artificial intelligence methods play a role in reducing the costs of education and training in institutes of sciences and technologies of physical and sports activities?
- Does the application of artificial intelligence methods play a role in covering and meeting the needs of users and partners in institutes of physical and sports sciences and technologies?

#### 4. GENERAL HYPOTHESIS

The application of artificial intelligence methods has an effective role in improving the quality of education and training in institutes of physical and sports sciences and technologies

##### 4.1 Sub-hypotheses:

- The application of artificial intelligence methods has a role in improving the quality of services in institutes of physical and sports sciences and technologies.
- The application of artificial intelligence methods has a role in reducing training costs in institutes of physical and sports sciences and technologies.
- The application of artificial intelligence methods has a role in covering and meeting the needs of users and partners in institutes of physical and sports sciences and technologies.

##### 4.2 Importance of the study :

- Identifying the various aspects of artificial intelligence and their most important levels in higher education institutions and bodies.
- Presenting the basic concepts related to both artificial intelligence and improving the quality of training.
- Identifying the role of artificial intelligence in improving the efficiency of the university institution.
- Trying to give an idea about the application of artificial intelligence methods in administrative organizations and institutions.
- Knowing the role of artificial intelligence applications and the positive variables they have brought about on the university institution and the novelty of the subject, especially the fruits resulting from the good application of artificial intelligence through keeping pace with university bodies and institutions with technological developments in addition to knowing the extent of their impact on the quality of training.
- The subject is also a new addition and a constructive contribution to enriching the library and enlightening readers about what the artificial intelligence revolution has brought about in the higher education sector, especially with the noticeable deficiency in addressing this subject.
- Showing the extent to which users benefit from artificial intelligence in satisfying their basic needs.
- This work is concerned with revealing the reality of using artificial intelligence in university bodies and institutions.

#### 5. STUDY OBJECTIVES

- Identifying artificial intelligence applications in university institutions.
- To reveal the role of artificial intelligence in improving the quality of training for university institutions, and the following branches from this objective:
  - a) Study the role of artificial intelligence in improving the quality of services in institutes of science and technology of physical and sports activities.

- b) Study the role of artificial intelligence in reducing training costs in institutes of science and technology of physical and sports activities.
- c) Study the role of artificial intelligence in covering and meeting the needs of users and partners in institutes of science and technology of physical and sports activities.

## 6. STUDY AREAS

- Human field : The study was applied to a group of employees and executives in the institutes of physical education and sports of the University of Algiers 03, Bouira, Khemis Miliana.
- Spatial field : The study was conducted at the level of the institutes of physical education and sports of the University of Algiers 03, Bouira, Khemis Miliana.

## 7. STUDY TERMINOLOGY

### 7.1 Artificial Intelligence

Terminologically : It is defined as : "The study and design of systems and devices that visualize the surrounding environment in order to behave in ways that mimic human behavior. It is a field of computer science concerned with designing intelligent computer systems that display the characteristics of intelligence in human behavior. It is also known as an entity built on the basis of the claim that human intelligence can be described and simulated in technical systems and devices." (Surur, 2000, p. 82)

### 7.2 Procedurally

We conclude that it is a science and technology based on fields such as computer science, mathematics, and engineering. It also relieves the decision maker of many risks and psychological pressures and makes him focus on more important things.

Second : Improving performance:

### 7.3 Terminologically

It is defined as : "An administrative philosophy that aims to develop the organization as a whole by developing the institution's activities and methods of developing service production on an ongoing basis. The philosophy of improving performance is considered one of the most important pillars that lead to the methodology of total quality management, the goal of which is to improve efficiency and effectiveness." (Farqad and Iman, 2013, p. 86)

It is also defined as : "The existence of a problem that needs to be solved, and this requires taking action to solve the problem or reduce its severity." (Mustafa, 2013, p. 125)

### 7.4 Procedurally

We conclude from the previous definitions that performance improvement is. It falls within the category of performance management, as managers resort to it to help correct recurring errors and raise the level of productive and behavioral performance of employees in order to achieve the organization's goals. The performance improvement process can also affect different levels of the organization, as it may be at the level of the team, the department, or the entire organization.

### 7.5 Third

Higher education in Algeria : It is one of the important sectors of the Algerian Republic, and includes public institutions of an administrative nature known as university institutions, which contribute to the dissemination and dissemination of knowledge, its preparation and development, and the formation of the necessary frameworks for the development of the country. The university network has four types of centers : universities, university centers, higher education and training institutes, national institutes and higher institutes. It is a center for education and training and a source for many scientific branches.

## 8. PREVIOUS AND SIMILAR STUDIES

### • The first study

The study of Tawil Ajjal, Sagheer Nour El-Din (2023) entitled: "Uses of artificial intelligence in the field of sports", a scientific article published in the Heritage Journal, Volume 13, Issue 04, the aim of this study is to shed light on the uses and applications of artificial intelligence in the sports field (clothing and equipment, sports facilities and sports training), by reviewing, describing and analyzing some of the results of studies that dealt with models of applying artificial intelligence in sports sciences.

The results showed that artificial intelligence contributed significantly to the development of sports equipment and facilities and the sports training branch, including success in organizing sports events, profits and achieving championships and titles.

### • The second study

The study of Dahya Murad and Bin Saih Samir (2023) entitled: "Mechanisms for applying artificial intelligence in sports management (a forward-looking vision), a scientific article published in the Journal of Excellence in Sciences and Technologies of Physical Education and Sports, Volume 08, Issue 01, The aim of this study is to provide an analytical forward-looking vision of the mechanisms for applying artificial intelligence in sports management, based on the inductive approach and analysis of related studies, research and books, and also to reach the nature of artificial intelligence by defining its concept and objectives, its characteristics, advantages and principles, as well as identifying smart systems and their uses in sports administrations and institutions and the mechanisms supporting their development and effectiveness on productivity and performance and identifying the risks and effects of their use in the sports field.

The study reached the presentation of a strategic approach to understanding the areas of artificial intelligence from an administrative perspective that helps to smoothly reach more comprehensive and better services for administrative performance in the sports institution, and that the use of artificial intelligence applications in sports institutions is one of the important and basic policies for linking and interacting within them.

### • The third study

The study of Alaq Hisham and Duraid Hanan (2022) entitled : "Applications of artificial intelligence In financial institutions, an introduction to activating financial inclusion, a scientific article published in the Journal of Economics and Sustainable Development, Volume 05, Issue 01. The research paper aimed to study the contribution of applying artificial intelligence in financial institutions to enhancing levels of financial inclusion, which has

always been a difficult goal for governments in both developed and developing countries. After theoretically establishing the study variables, this research paper presented some experiences of financial institutions that rely on artificial intelligence in providing services to their customers, and showing the numbers they achieved by relying on artificial intelligence algorithms.

The study concluded that artificial intelligence contributed effectively to making financial services available to important groups excluded from formal financial systems by virtue of the evaluation of the classical financial industry, and artificial intelligence could be the optimal solution to raise levels of financial inclusion. The fourth study: A study by Ayadi Issam and Ashb Lakhdar (2021) entitled: "Models of the application of artificial intelligence in sports sciences", a scientific article published in the Journal of Sports Performance Sciences, Volume 03, Issue 01, we aim through our study to identify models of the application of artificial intelligence in sports sciences in particular, and the world is experiencing a major information revolution, and we also try to shed light on the application of artificial intelligence in the field of sports training, equipment and sports facilities, and we conducted a descriptive analytical study of the models for the application of artificial intelligence in sports, and the most important results reached:

- Artificial intelligence contributed greatly to the development of sports training by creating the smart trainer
- Artificial intelligence contributed to the development of sports equipment in a better way
- Artificial intelligence contributed to the development of sports facilities.

## 9. FIELD PROCEDURES

- a) **Study methodology:** The study relied on the descriptive analytical method for its suitability to the objectives and nature of the current study.
- b) **Study community:** The study community consisted of a group of cadres and employees at the level of the Institutes of Physical Education and Sports of the University of Algiers 03, Bouira, Khemis Miliana, totaling (780) employees.
- c) **Study sample:** The aim of selecting the sample is to obtain information from the original study community, as it is the selection of a number of individuals to study as representatives of the study community. This study included 200 administrative employees and professors as a sample for the study. The sample was selected in a simple random manner at the level of the Physical Education and Sports Institutes of the University of Algiers 03, Bouira, Khemis Miliana.

## 10. STUDY TOOL

The questionnaire was used as a means of collecting information in order to reach the study objectives and answer its questions.

Description of the study tool : It was divided into two main sections:

- **Section one :** It included some demographic characteristics of the respondents.
- **Section two :** It included four axes, which are as follows:

- **Part one: Represents:**

The first axis : It is the applications of artificial intelligence represented in technological systems (independent) which reflects the reality of technology in providing training and services, and includes 6 phrases.

- **Part two: Represents the variables of training and performance (dependent), distributed over three axes that include the following:**

**Axis two** : Improving the ability to quality training, including 8 phrases.

The third axis : Reducing financial costs includes 5 statements.

The fourth axis : Meeting the needs of users and partners includes 5 statements.

d Validity and reliability of the study tool : To verify the reliability of the study tool, the (Cronbach Alpha) equation was applied to all paragraphs of the study areas and the tool as a whole.

**Table (01) shows the reliability coefficients for the areas and the tool as a whole.**

**Table 01: Internal consistency coefficients (Cronbach's alpha) for each dimension of the study tool and for the tool as a whole**

Validity coefficient	Internal consistency coefficient (Cronbach's alpha)	Number of paragraphs	Domain
0.81	0.65	06	Technological Systems
0.92	0.85	08	Improving Configuration Capability
0.95	0.91	05	Reduce Costs
0.92	0.85	05	Meeting Users and Partners Needs

Source : SPSS V26 program outputs

Table (01) : shows that the values of the reliability coefficients (Cronbach's alpha) for the study areas ranged between (0.97-0.65), which are high values for application purposes, as most studies indicated that the acceptance rate of the reliability coefficient is (0.60), which indicates that the research tool has high reliability.

As for the values of the validity coefficient (the root of the reliability coefficient), we note that the values are also high, which makes us confident in the validity of analyzing the study questionnaire, interpreting its results and testing its hypotheses.

#### **A. Apparent validity of the questionnaire tool:**

This means ensuring that the questionnaire form that was prepared will measure what it was prepared to measure or include all the elements that should be included in the analysis on the one hand and the clarity of its paragraphs on the other hand, and the validity of the study tool was confirmed by presenting it to arbitrators from specialized professors. Before the questionnaire list was presented in its final form, it went through several stages to test its validity and reliability in order to implement the study. In order to verify the validity of the tool, meaning to ensure that it is suitable for measurement, we relied on the apparent validity of a number of arbitrators, professors, and experts. They were provided with the research objectives to ensure their validity and achievement of the purposes and objectives of the research. They expressed their opinions and suggestions, on the basis of which the list was modified, and then it settled on its final position, which was distributed to the sample.



**B. Statistical analysis tools:**

The SPSS program was used and the following statistical methods were relied upon to analyze the data:

- Descriptive statistics for the research variables represented by questionnaire phrases and relative frequency distributions.
- CRONBACH'S ALPHA stability coefficient, which reflects the stability of the measurement and its lack of contradiction with itself.
- **Arithmetic mean** : to obtain the average answers of the study sample members to the questionnaire questions.
- **Standard deviation** : which enables us to know the extent of absolute dispersion between their arithmetic means
- Testing the statements using T-TEST
- Correlation study with the aim of verifying the existence of a statistically significant correlation between the independent and dependent variables. Pearson's correlation coefficient was used
- Simple linear regression study (model summary, model significance and model coefficients).

## 11. STUDY AND ANALYSIS OF THE STUDY AXES AND TESTING THE HYPOTHESES RELATED TO THEM

### A. Analysis of the first axis: technological systems as a method of artificial intelligence:

It displays the arithmetic mean and standard deviation for each of the statements related to the first axis - technological systems.

**Table 02: It displays the arithmetic mean and standard deviation for each of the statements related to the first axis - technological systems**

Relative weight	T	P-Value	Trend	Standard deviation	Arithmetic mean	Phrases	Axis
44%	-24.851	0.00 spiritual	Disagree	0.7010	2.22	The technological means used in education and training are sufficient.	Technology Systems
42%	-23.284	0.00 spiritual	Disagree	0.8570	2.11	The technological means used in providing services cover all demand.	
46%	-18.079	0.00 spiritual	Disagree	0.8510	2.31	The institution keeps up with technology in providing services on an ongoing basis.	
58%	-3.545	0.00 spiritual	Disagree	0.7690	2.88	There is ease by partners in using technology.	
48%	-14.88	0.00 spiritual	Disagree	0.874	2.42	The institution follows up on the efficiency of the technological means used.	
57%	-4.225	0.00 spiritual	neutral	0.878	2.83	The institution provides continuous training programs for employees on how to use technology clearly.	
-	-24.190	0.00 spiritual	Disagree	0.4970	2.462	Mean and standard deviation of the overall axis	

Source : SPSS V26 program outputs

Table No. 02 shows: Results of the statements of the first axis related to technological systems. The following are the most important results that were reached

The averages of the respondents' answers to the statements of the first axis: technological systems ranged between 2.11 and 2.88, which corresponds to disagreement and neutrality on the paragraphs of that axis according to the five-point Likert scale, while the arithmetic mean for the axis as a whole was 2.462, meaning that the average of the respondents' answers was "disagree" according to the field corresponding to the five-point Likert scale explained previously.

There is a statistically significant difference between the average of the respondents' answers and neutrality due to the P-Value of the T-test for one sample which was smaller than the approved significance level of 5%, and the t values are negative values which indicates that the averages actually violate neutrality and are less than the value 3. We note that the level of the respondents' evaluation of the importance of each of the axis's statements ranged between 42% and 57% and the highest relative importance was for the following statement: "The availability of continuous training programs in the institution for employees and professors on how to use technology is clear."

#### A. Analysis of the second axis: Improving the ability to quality training:

The arithmetic mean and standard deviation for each of the statements of the second axis are shown. Improving the ability to quality training.

**Table 03: Shows the arithmetic mean and standard deviation for each of the statements of the second axis Improving the ability to quality training**

Relative weight	T	P-Value	Trend	Standard deviation	Arithmetic mean	Phrases	Axis
93%	46.141	0.00 spiritual	Strongly agree	0.794	4.64	Ease of use of smart technology by users and partners.	Improve the ability to configure quality
98%	127.785	0.00 spiritual	Strongly agree	0.333	4.90	Providing the opportunity to obtain smart services outside of working hours	
82%	46.812	0.00 spiritual	agree	0.522	4.09	Ease of access to smart services.	
76%	24.975	0.00 spiritual	agree	0.716	3.80	Providing the information that partners need on an ongoing basis.	
80%	28.257	0.00 spiritual	agree	0.788	3.99	Achieving user and partner satisfaction with the services provided to them.	
95%	68.850	0.00 spiritual	Strongly agree	0.565	4.74	The institution's use of artificial intelligence applications and methods increases the quality of education and training.	
96%	75.408	0.00 spiritual	Strongly agree	0.535	4.80	The institution's use of artificial intelligence applications increases the speed of provision to users and partners	
72%	18.172	0.00 spiritual	agree	0.736	3.59	Artificial intelligence provides all the information requested by users and partners	
-	65.473	0.00 spiritual	Strongly agree	0.452	4.32	Mean and standard deviation of the overall axis	

## 12. TESTING AND DISCUSSING THE STUDY HYPOTHESES

### A. Testing the first hypothesis:

**Testing the hypothesis that says :** The application of artificial intelligence methods has a role in improving the quality of services in institutes of sciences and technologies of physical and sports activities.

To test the validity of the first hypothesis from the respondents' point of view, we will rely on the one-sample t-test to test the significance of the general average of the second axis, which reflects the reality of training in institutes of physical education and sports after applying artificial intelligence services in providing services in terms of improving the ability to provide quality services and training. The following are the results:

**Table 06 : Arithmetic mean and general standard deviation for the second axis - Improving the quality of services and training**

T	P-Value	Trend	Standard deviation	Arithmetic mean
65.473	0.00 spiritual	AGREE	0.452	4.32

Source : SPSS V26 program outputs

### We note from the previous results that :

The arithmetic mean for this axis was 4.32, meaning that the average response of the respondents was "strongly agree" according to the five-point Likert scale domains explained above. It is also statistically significant, as there is a fundamental difference between the average responses of the respondents and neutrality, due to the P-value of the T-test for one sample, which was smaller than the approved significance level of 5%, and the t-value is a positive value, indicating that the average actually contradicts neutrality, and is greater than the values 3, and from this we conclude that there is a positive role for using artificial intelligence applications in improving the ability to provide quality services and training in physical education and sports institutes .To test the validity of the first hypothesis, considering the use of artificial intelligence as an independent variable, and improving the quality of services as a dependent variable, a number of tests will be addressed, represented first by studying the correlation, followed by building a simple linear regression model.

### Correlation study:

In order to verify the existence of a statistically significant correlation between the independent and dependent variables and to determine the strength and direction of this relationship, if any, Pearson's correlation coefficient was used. The following table shows the results that were reached .We note from the previous outputs the following : The model summary table shows that the value of the coefficient of determination reached 64%, which means that the independent variable (the use of artificial intelligence) was able to explain 64% of the total changes in improving the fulfillment of the needs of the labor market in university institutions and bodies .The table for the significance of the model shows that the model is significant as the p-value corresponding to the F test reached 0.000, which is smaller than the approved significance level of 5%, indicating the existence of a statistically significant role for the use of artificial intelligence in improving the fulfillment of the needs of users and partners in the university institution, and this role is a positive role .The model coefficient model shows the value of the coefficients of the studied model, as the regression constant reached 6.835, and the regression coefficient 1 1.06, which means that if artificial intelligence is used as one unit,

improving the fulfillment of the needs of users in the sports institution will increase by an average of 1.1 units.

### 13. CONCLUSIONS

- There is an effort to use applications and methods of technological systems in the university institution, and this is due to the policy adopted by the Ministry The will, and there is an attempt to apply artificial intelligence in recent years.
- There is a positive role for using artificial intelligence in improving the quality of education in the university institution, which confirms the importance of the role of using artificial intelligence services in the university institution and its contribution to achieving user satisfaction and partners of the pedagogical relationship with the university.
- There is a positive role for using artificial intelligence in reducing costs in the university institution, which confirms the need to invest in artificial intelligence services because of its effective role in reducing costs by reducing operational costs and enhancing operational efficiency and thus increasing profits.
- There is a positive role for using artificial intelligence in improving the needs of users and partners in the sports institution, which confirms the importance of artificial intelligence methods and services in responding to basic requests and questions of partners without the need to refer to the institution's employees.

The sum of the above results shows a positive role for using artificial intelligence methods and services in improving the quality of performance and education of the institution and university bodies and raising the value of their performance, as it sets a strategic vision for investing in these services and modern technologies in general.

### 14. SUGGESTIONS AND RECOMMENDATIONS

**In light of these conclusions, the study recommends the following:**

- Work on conducting other scientific research on this topic and delving deeper into it.
- We recommend paying more attention to the field of using artificial intelligence than it is, as it has a positive and effective role in general in increasing the quality of services provided by university institutions and bodies.
- We recommend generalizing appropriate and sufficient training on the mechanism of using artificial intelligence applications and services for employees of university institutions so that they can transfer them to users and partners with high efficiency.
- The necessity of studying the project of applying artificial intelligence services provided to users and partners, which in turn enhances the development of the performance of university institutions and enhances their formative value.
- The university institution employs specialists in the field of computer science and artificial intelligence in the technical staff.
- Organizing training courses in the field of artificial intelligence in the administrative field in all its categories.
- Relying on the most advanced equipment that is linked to modern technologies to exploit the advantages of artificial intelligence.

- Adopting modern and advanced technologies as a basic and priority element in project programming.
- Encouraging researchers to innovate in artificial intelligence by organizing national competitions.

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