

The importance of artificial intelligence in enhancing the level of administrative systems in sports organizations

أهمية الذكاء الاصطناعي في الرفع من مستوى النظم الإدارية على مستوى المؤسسات الرياضية

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Abstract :

The study aimed to identify the importance of artificial intelligence, utilizing a descriptive approach and relying on a questionnaire as a study tool. The study sample consisted of 30 administrators from the Directorate of Youth and Sports in the State of M'Sila, selected through a comprehensive survey sample. It was concluded that artificial intelligence has significant and effective importance in enhancing the level of administrative systems within sports institutions.

Keywords: Artificial intelligence . Administrative systèmes. Sports institutions.

المخلص :

هدفت الدراسة الى التعرف على أهمية الذكاء الاصطناعي في الرفع من مستوى النظم الإدارية على مستوى المؤسسات الرياضية، حيث تم استخدام المنهج الوصفي وتم الاعتماد على استمارة الاستبيان كأداة للدراسة وضمت عينة الدراسة 30 إداري على مستوى مديرية الشباب والرياضة لولاية المسيلة تم اختيارهم عن طريق عينة المسح الشامل، وتم التوصل إلى أنه للذكاء الاصطناعي أهمية كبيرة وفعالة في الرفع من مستوى النظم الإدارية على مستوى المؤسسات الرياضية.

- الكلمات المفتاحية : - الذكاء الاصطناعي، النظم الإدارية، المؤسسات الرياضية.

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1- Introduction and problematic of the study:

In recent years, the world has witnessed a rapid acceleration in technological development, thanks to the allocation of more resources toward research, development, and knowledge production. This has made technology, in its transnational sense, a fundamental component in measuring the level of development and progress of societies. This technological advancement has contributed to a tremendous revolution, reflected on the internet, satellites, digital technology, computers, and everything related to artificial intelligence outputs. These impacts have led to the formation of a new state and the crystallization of new concepts and mechanisms, as artificial intelligence has become the focus of the world's attention after proving its exceptional capability to be used in many fields. In the field of entrepreneurship, experts in the technology world expect a real boom in the near future in the use of artificial intelligence for business management, due to the significant role AI technologies play and their great impact on the ability to predict figures, perform financial analyses, and assist employees, especially those working in human resources, finance departments, and development.

In our time today, the era of fast and continuous technology, digital transformation has become an essential and important factor for the sports sector. It has become necessary for various sectors and institutions, including sports ones, to keep up with these changes in order to remain in the race of competition and continuity (charif, 2025, p.184).

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Artificial intelligence (AI) has made extremely rapid progress in recent years, with the emergence of smart speakers and question-answering chatbots, followed by factory robots and self-driving cars, AI-generated music, artwork, and perfumes, as well as gaming and discussion systems. The transformation of AI from a largely theoretical system into a practical tool for a wide range of new applications has been demonstrated. Some people see 'artificial intelligence as the new information technology,' and this is evident across the industry: such as machine learning and other core AI materials in institutions and universities, helping doctors detect skin cancer, assisting managers in organizations to find qualified candidates, enabling banks to decide whom to grant loans, enhancing product recommendations, targeted advertising, classifying articles, promoting and retaining employees, recording risks, tagging images, detecting fraud, cybersecurity defenses, and a range of other applications (Canals et Heukamp, 2022, p.23).

Today, institutions operate in a rapidly changing environment due to the fast and successive developments in software and computer systems, along with the emergence of new innovations in this field. One of these innovations is artificial intelligence, which has transformed how institutions interact with their internal and external environments. The adoption of various AI applications by institutions has facilitated faster and easier interactions with different clients and has expanded the scope of these interactions to include a large number of stakeholders.

Recognizing the importance of artificial intelligence applications, organizations of various types and sizes, including, certainly, professional sports clubs, strive to make the most of these applications in the operations they carry out and the services they provide. These technologies have never been an obstacle to the human element or a replacement for it; rather, they have always been a means to enhance performance and a bridge through which many creative ideas can reach beneficiaries in a way that achieves higher levels of satisfaction with institutional performance.

Currently, clubs still face difficulties in practical and scientific integration, as well as limited actual use or optimal exploitation of knowledge management in the sports sector due to the presence of obstacles. With the emergence of the globalization of the economy and information technology, and the shortage of specialized personnel in artificial intelligence applications, administrative problems have increased, resulting in institutions being unable to keep pace with global progress. Methods have consequently emerged that rely on artificial intelligence and knowledge management, necessitating the search for a modern methodology for managing institutions to ensure their survival and development.

Based on all of the above, we raise the following general question:

Does artificial intelligence contribute to improving the level of administrative systems at sports institutions?

From the general question, the following specific questions emerge:

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- What are the obstacles to implementing artificial intelligence at sports institutions?
- What are the proposed mechanisms for applying artificial intelligence to enhance the level of administrative systems at sports institutions?

2- Research Hypotheses:

General Hypothesis:

General Hypothesis: Artificial intelligence plays an important role in improving the level of administrative systems within sports organizations.

Specific Hypotheses:

- The high financial liquidity required for artificial intelligence applications is one of the biggest obstacles preventing its implementation at the level of sports institutions.
- Training and qualifying employees contributes to improving the level of administrative systems at the level of sports institutions.

3- Objectives of the Study:

The study aims to:

- Identify the role of artificial intelligence in enhancing the administrative systems at sports institutions.
- Identify the obstacles to the implementation of artificial intelligence at sports institutions.
- Identify the proposed mechanisms for applying artificial intelligence to improve administrative systems at sports institutions.
- Understand the concept and importance of artificial intelligence.

4- Significance of the Study:

The field of using artificial intelligence applications is considered one of the most important areas and has become more than a necessity for all administrations and organizations at all levels. Mastery of the field of artificial intelligence is considered one of the biggest factors contributing to the success and development of sports institutions, whose administrative operations require meticulous planning, organization, financial control, and guidance that rely on many complex calculations and ideas to be implemented in order to achieve the goals these institutions aim for, whether they are sports administrations or clubs.

5- Keywords in the study:

Artificial Intelligence:

Artificial intelligence is considered one of the branches of computer science concerned with simulating human behavior, and the ability of a system to correctly interpret external data, learn from it, and use it to achieve specific goals and tasks through flexible adaptation. (Mahmoud, 2020, p.177)

Practically:

Artificial intelligence is one of the fields of computer science that studies how machines are made to work intelligently. Artificial intelligence has many functions.

Administrative Systems:

They are a set of individuals, equipment, procedures, software, and databases that manually, mechanically, or automatically work on collecting, storing, and

processing information and then disseminating it to the beneficiaries. (Al-Hissi, 1998, p.45)

Operationally: They are specific activities carried out by administrators to facilitate the workflow within institutions with the aim of developing and improving their outputs.

Sports institutions:

They are specific organizational structures, whether private or public. They focus on working in the sports field, aiming to promote sports activities and provide various services to the sports public, whether as a profession or a hobby. They include various structures such as sports federations, Olympic committees, sports clubs, and educational institutions for sports programs, and everything related to the sports aspect. They also organize championships and competitions, improve the level of athletes, whether professional or amateur, promote health and practice, and provide various services related to administrative branches, marketing, finance, and others. Various sports institutions strive to enhance physical activity and sportsmanship according to their principles (Melki, Saidane, 2024, p. 181).

6- Previous Studies:

The study by Ben Khadim and Laayadi (2025) : aimed to examine the role of artificial intelligence applications in improving the administrative efficiency of Algerian sports institutions. The researchers used a descriptive-analytical approach and employed a questionnaire as the study tool. The study sample consisted of 24 employees from the Directorate of Youth and Sports in the Souk

Ahras province, selected randomly. The results showed that artificial intelligence positively contributes to improving administrative efficiency, helps reduce decision-making time, increases the accuracy of financial forecasts, and improves the quality of administrative decisions as well as employee and customer satisfaction.

The study by Sabry and Al-Eisawi (2023) : aimed to identify the obstacles to using artificial intelligence systems in handball training academies in Damietta Governorate. To achieve this, a study was conducted on a sample of 91 individuals from the boards of directors and technical and administrative staff of all handball training academies in Damietta Governorate, totaling 8 academies. The researchers relied on the descriptive method using a survey approach. The results indicated a lack of awareness of the concept of artificial intelligence and its applications among many employees in the handball academies in Damietta Governorate, despite an awareness of the importance of expanding digital transformation due to the intertwined challenges and rapid societal changes. Additionally, there is insufficient financial funding necessary for purchasing the equipment and software required to use AI applications and systems in handball academies. There is also a lack of financial support allocated for training and qualifying staff to use AI applications and systems. Moreover, the legislative and legal framework in sports institutions is inflexible and does not assist in implementing AI systems.

The practical chapter:

1- Followed Methodologies :

Exploratory Study: Also known as exploratory experiments or so-called exploratory studies, it is considered one of the most important research procedures undertaken by the researcher to avoid errors, difficulties, or problems during the main experiment. The exploratory experiment is regarded as a miniature version of the main experiment, whose purpose is either to uncover certain scientific facts, test the work to identify obstacles and shortcomings that may arise during the implementation of the main experiment, or to train some assisting personnel in the work. (Al-Abadi, 2015, p.128)

The researcher conducted an exploratory study to assess the researcher's readiness to distribute the questionnaire and the time required to distribute the questionnaire designed to measure this phenomenon, as well as to evaluate the suitability of the research tool for the sample members. The questionnaire was distributed to a group of administrative staff (05 administrators) at the Directorate of Youth and Sports of M'Sila Province in order to identify errors and gaps in the questionnaire.

This helped us to understand and identify the clarity or ambiguity of the questions and to know which questions might cause discomfort to the respondents or which they might try to avoid answering, so that they could be rephrased in a simpler way or in another manner before the final distribution

and the final version of the study. Among the most important objectives that can be drawn from the exploratory study are the following:

- Identifying the difficulties and problems that the researcher may encounter.
- Familiarizing with the main field of study and practicing the research steps.
- Preparing and piloting research tools, and assessing their psychometric properties in terms of validity, reliability, and their ability to measure research variables.
- Ensuring the suitability of the instructions and data for the tool, the correctness of its language, and the ease of understanding for the sample members.
- Selecting the necessary statistical formulas.
- Examining the validity and reliability of the questionnaire directed at the officials.

2- Fields of Study:

- **Spatial Scope:** The study was conducted at the headquarters of the Directorate of Youth and Sports in the Wilaya of M' Sila.
- **Time Scope:** From September 1, 2025, to September 30, 2025.
- **Human Scope:** The study was conducted on the administrators working at the Directorate of Youth and Sports in the Wilaya of M'Sila.

Research population: It is all individuals who share a single observable characteristic. (Abu Allam, 2006, p.154)

Based on the research problem and its objectives, the research population in our study consists of the administrators working at the Directorate of Youth and Sports in the Wilaya of M'Sila.

Research sample: It is a part of the society in which the characteristics of the society itself are present. The rationale for conducting a study on the sample is that, in many cases, it is impossible to conduct the study on the entire society. Therefore, the sample is chosen with the aim of reaching results that can be generalized to the society, and this becomes possible if the characteristics of the sample represent the characteristics of the society in terms of the largest possible number of variables. (Bouhouch Ammar et al., 2019, p.68)

The study sample reached 25, after excluding 5 individuals who were initially given the questionnaire in the exploratory study. It was selected through a comprehensive survey sample due to the small size of the study population.

Research Tools: This study relied on the questionnaire as a tool, which is considered a tool used in scientific research to obtain data related to the subject. It also depends on the type of study concerning its application and is used to gather data and information about what already exists so that the researcher can verify the validity of the proposed hypotheses. (Boudoud, AtaAllah, 2009, p. 76)

The study's questionnaire consisted of two sections: the first section is related to administrative performance and includes 10 items, and the second section is related to administrative creativity and also includes 10 items, making the total number of items in the questionnaire 20.

Psychometric Properties of the Tool:

Tool Validity: This means that the test measures what it was designed for, that is, it provides a degree that reflects or represents the individual's ability.

Expert Validity: The questionnaire form was presented to a group of six doctors specialized in management and sports administration, where the necessary deletions and modifications of the questionnaire statements were made in light of the suggestions provided by the expert professors.

Instrument reliability: Reliability means stability, in the sense that if the test is applied repeatedly, it yields the same result. Reliability also means objectivity, meaning that an individual obtains the same score regardless of who administers or grades the test. In this case, a reliable test is one that evaluates an individual in a way that two people would agree upon (Al-Abadi, 2015, p.124).

Table .01 shows the value of the Cronbach's alpha coefficient for the questionnaire

Questionnaire Axes	Number of Statements	Cronbach's Alpha
Artificial Intelligence Axis	10	0.89
Administrative Creativity Axi	10	0.96
Overall Questionnaire	20	0.925

It is evident from the results shown in the table that the value of Cronbach's alpha coefficient was high for each axis, ranging between (0.96-0.89), with the highest value in the 'Proposed Mechanisms' axis, and the lowest in the 'Artificial Intelligence Barriers' axis. The value of the alpha coefficient for all items of the overall questionnaire reached 0.925, which is a high reliability coefficient.

Therefore, the questionnaire is considered distribute, and the researcher has confirmed the validity and reliability of the study tool, which gives full confidence in the accuracy of the results. The researcher used Cronbach's alpha to measure the reliability of the questionnaire, obtaining the alpha coefficient value for each axis of the questionnaire and for the questionnaire as a whole.

Research Methodology: To achieve the objectives of the study, the researcher used the descriptive-analytical method, through which they attempt to describe the phenomenon under study, analyze its data, examine the relationships between its components, the opinions expressed about it, the processes it involves, and the effects it produces.

The descriptive-analytical method is considered a method that seeks to describe contemporary or current phenomena or events. It is one of the forms of systematic analysis and interpretation to describe a phenomenon or problem, providing data on certain characteristics in reality, and requires knowledge of the study participants, the phenomena being studied, and the times used to collect the data. (Al-Hamdani, 2006, p.100)

Study Variables:

- **Independent Variable:** The independent variable is the variable that the researcher wants to identify its effect on another variable. In our study, the independent variable is represented by artificial intelligence.
- **Dependent Variable:** The dependent variable is the outcome that arises as a result of the influence of the independent variable. In our study, the dependent

variable is represented by administrative systems at the level of sports institutions.

Statistical Methods of the Study: By this, we mean the methods used to process the data obtained from various exploratory and main research experiments, because the data and numbers obtained from tests and measurements are ambiguous and do not have meaning except through statistical processing. Currently, data processing has begun using computers and the SPSS system, which contains all the required statistical tools, and the researcher only needs to mention the statistical method used in the research without presenting how it was used or the form of the formula applied, assuming that the SPSS system was used (Al-Abadi, 2015, p. 131).

The SPSS statistical program was used through the following statistical methods:

- Cronbach's alpha coefficient to determine the reliability of the questionnaire items
- Frequencies and percentages to describe the sample
- Arithmetic mean to measure the central tendency of the responses
- Standard deviation to measure the level of agreement and dispersion,

2- Exposure , analyses and result exam :

Presentation and analysis of the results of the first axis:

Table 02. includes the responses of the sample members to the statements of the first axis.

Transactions	Arithmetic Mean	Standard Deviation	Significance Level	Statistical Decision
Axis One	28.36	8.38	0.05	High

It is evident from the table that the overall level of statements regarding obstacles to artificial intelligence in sports institutions is (high) by a significant percentage, including administrative, human, and legislative obstacles, and especially, and to a greater extent, the high financial liquidity required for artificial intelligence applications, which is considered one of the major obstacles preventing their implementation at the level of sports institutions.

This aligns with **the study by Sabri and Al-Eisawi (2023)**, which pointed out the use of artificial intelligence systems in handball academies in Damietta Governorate and its main findings that include: weak financial funding necessary for purchasing equipment and software required to use AI applications and systems in handball academies; insufficient financial support allocated for training and qualifying staff to use AI applications and systems; and the legislative and legal framework in sports institutions being inflexible and not supportive of implementing AI systems. Thus, the first research question has been answered: high financial liquidity for artificial intelligence

applications is considered one of the greatest obstacles preventing their implementation at the level of sports institutions.

Presentation and analysis of the results of the second axis:

Table 03. shows the responses of the sample individuals to the statements of the second axis

Transactions	Arithmetic Mean	Standard Deviation	Significance Level	Statistical Decision
Axis Two	30.20	7.42	0.05	High

It is evident from the table that the overall level of statements regarding the proposed mechanisms for implementing artificial intelligence at the level of sports institutions is high by a significant margin, as training and qualifying employees contributes to raising the level of administrative systems in sports institutions. This aligns with **the study by Ben Khadim and Laayadi (2025)**, which concluded that newly implemented intelligent systems in human resource management support improving recruitment processes and task allocation through the use of data analysis. Thus, the second research question has been answered: training and qualifying employees contributes to raising the level of administrative systems in sports institutions.

3- Finding and propositions results:

- The use of artificial intelligence leads to leadership and excellence in sports clubs.
- Applying artificial intelligence in administrative institutions contributes to improving their administrative systems. - Artificial intelligence technology requires workers equipped with high expertise and skills.

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- The high financial cost is one of the biggest obstacles to applying artificial intelligence at the level of sports institutions.
- The lack of necessary qualification for personnel at sports institutions is considered one of the significant human-related obstacles.
- To some extent, the sports club employs staff according to their expertise.
- Staff provide periodic reports about the work system in sports clubs to some extent.
- The lack of a technological environment that allows the application and benefit of artificial intelligence.

Propositions:

- Work on qualifying and training employees to use artificial intelligence in the best possible way.
- It is necessary for management at the level of sports institutions to increase their focus on applying and supporting artificial intelligence with the aim of spreading a culture of smart electronic and digital work and the benefits that come from it.
- Establish a specialized artificial intelligence department at the level of sports institutions.
- Provide the necessary financial support and liquidity to create artificial intelligence applications, which will contribute to the development of management systems.
- Enact laws and regulations covering various aspects to implement artificial intelligence at the level of sports institutions.

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