Requirements for Implementing Electronic Management in Algerian Sports Facilities: A Field Study of the Rabah Bitat Multi-Sports Complex in Bouira Province (Algeria)

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Abstract

This study aimed to identify the human, material, and technical requirements for implementing electronic management in Algerian sports facilities, through a field study of the Rabah Bitat Multi-Sports Complex in Bouira Province (Algeria). Given the nature of the topic, the researchers adopted a descriptive-analytical approach and used a questionnaire as the main data-collection instrument. The questionnaire was administered to a purposive sample of 24 managers and administrative staff, who constituted the entire study population (comprehensive enumeration). The validity of the instrument was established by submitting it to a panel of expert referees, and its reliability was assessed using Cronbach's alpha, which reached 0.814. The data were analyzed using frequencies, percentages, means, standard deviations, and the chi-square (χ^2) test. The results showed that human resources, material resources, and the technical dimension are among the most important requirements contributing substantially to the successful implementation of electronic management in sports facilities in Algeria: all items were statistically significant at the $\alpha = 0.05$ level, and the means ranged from 2.42 to 2.75. In light of these findings, the study recommends investing in the development of human competencies, providing modern equipment and software, adopting a comprehensive electronic management strategy, and activating partnerships with leading technology institutions.

Keywords: electronic management; sports facilities; human resources; material resources; technical dimension; Algeria.

1. Introduction

The contemporary world is undergoing profound transformations in all spheres of life, driven by the rapid advance of information and communication technology, which has become a cornerstone in reshaping the administrative and organizational models of institutions of every kind (Al-Farsi & Al-Hinai, 2020, p. 47). Digital transformation is no longer merely a strategic option; it has become an imperative for ensuring competitiveness and sustainability in an environment characterized by constant change and growing complexity (Brynjolfsson & McAfee, 2017, p. 5).

Against this backdrop, electronic management has emerged as one of the most important modern administrative concepts, bringing about a qualitative shift in the way organizations are run. It rests on the use of information and communication technologies across all administrative

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processes, thereby improving efficiency and effectiveness, reducing costs, and enhancing service quality (Al-Salmi, 2008, p. 23). Many researchers have affirmed that electronic management is no longer an administrative luxury but an essential instrument for achieving institutional excellence and keeping pace with the demands of the digital age (Al-Hakim, 2015, p. 56).

Electronic management is likewise an indispensable requirement for contemporary sports organizations, which operate in complex and constantly changing environments and face multiple challenges that call for keeping pace with global technological developments (Hassan, 2019, p. 112). Many developed countries have paid considerable attention to the implementation of electronic management in sports facilities because of its pivotal role in improving administrative performance, strengthening transparency, and facilitating access to sports services (Ratten, 2020, p. 258). International experience has also shown that applying electronic management in sports facilities helps raise utilization rates, improve the user experience, and increase revenues (Mihai, 2021, p. 315).

In Algeria, recent years have witnessed growing interest in developing sports facilities and improving their management, with numerous multi-sports complexes, stadiums, and other sports infrastructure built across the country's provinces (Boukhmis, 2018, p. 45). However, this attention to physical infrastructure has not been matched by comparable attention to administrative and managerial development. Most Algerian sports facilities continue to rely on traditional management methods and suffer from the weak implementation of electronic management and its requirements (Zaoui et al., 2021, p. 12).

Several studies point to challenges that hinder the implementation of electronic management in Algerian sports facilities, chief among them a weak technological infrastructure, a shortage of specialized personnel, the absence of digital strategic planning, and limited funding (Izian & Guermache, 2025, p. 460; Salah Eddine, 2025, p. 38). Accordingly, there is a growing need for field studies that identify the essential requirements for implementing electronic management in sports facilities and offer practical recommendations to decision-makers, so as to help overcome these challenges and achieve the desired digital transformation.

Proceeding from this reality, the present study seeks to identify the human, material, and technical requirements for implementing electronic management in Algerian sports facilities through a field study of the Rabah Bitat Multi-Sports Complex in Bouira Province. This complex is one of the most important sports complexes in the region and comprises a number of affiliated units across the province's municipalities.

In light of the foregoing, the main research problem can be formulated as follows:

What are the most important human, material, and technical requirements that contribute to the successful implementation of electronic management in Algerian sports facilities?

The following sub-questions branch out from this main problem:

1. To what extent are qualified human resources available for implementing electronic management in sports facilities in Algeria?

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2. To what extent are the material resources (equipment and software) needed to implement electronic management available in sports facilities in Algeria?
3. To what extent is the technical dimension (systems and applications) needed to implement electronic management available in sports facilities in Algeria?

Hypotheses

Main hypothesis: Human, material, and technical requirements are among the most important requirements that contribute substantially to the successful implementation of electronic management in Algerian sports facilities.

Sub-hypotheses:

- Qualified human resources are one of the essential requirements that contribute substantially to the successful implementation of electronic management in sports facilities in Algeria.
- Material resources (equipment and software) are one of the essential requirements that contribute substantially to the successful implementation of electronic management in sports facilities in Algeria.
- The technical dimension (systems and applications) is one of the essential requirements that contribute substantially to the successful implementation of electronic management in sports facilities in Algeria.

2. Significance and Objectives of the Study

2.1 Significance of the Study

This study is particularly significant in several respects:

- **Theoretical significance:** The study enriches the Arabic scientific literature with a recent and timely topic—electronic management in sports facilities—a field that still calls for further studies and research (Layaida, 2025, p. 15). It also opens new horizons for researchers to examine the subject from multiple angles.
- **Practical significance:** The study offers field results that managers of sports facilities and supervisory authorities in Algeria can draw on in developing their plans and programs for implementing electronic management and in improving the quality of the services provided.
- **Methodological significance:** The study adopts a rigorous descriptive-analytical approach and uses appropriate statistical tools, which makes its results generalizable and applicable and allows it to serve as a basis for future studies.

2.2 Objectives of the Study

This study aims to:

1. Identify the most important requirements that contribute to the successful implementation of electronic management in sports facilities in Algeria.
2. Determine the extent to which qualified human resources are available for implementing electronic management in sports facilities.
3. Determine the extent to which the material resources needed to implement electronic management are available in sports facilities.
4. Determine the extent to which the technical dimension needed to implement electronic management is available in sports facilities.

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5. Offer practical recommendations to those responsible for sports facilities in Algeria.

2.3 Reasons for Choosing the Topic

2.3.1 Subjective reasons

- A personal interest in the topic, which stems from the researchers' field of specialization (physical education and sport) and is highly topical.
- The aim of enriching the institute's library with new references that other researchers can use to carry out complementary studies, given the urgent need for electronic management in light of technological developments across sectors, especially in administration.
- The aim of improving the researchers' methodological and subject-matter competence and enriching their knowledge and experience through the practice of scientific research.
- Addressing aspects that, to the best of the researchers' knowledge, have not previously been examined.

2.3.2 Objective reasons

- This study is a practical contribution to highlighting the importance of the requirements that contribute substantially to the implementation of electronic management in sports facilities in Algeria, and it heightens scholarly interest in the topic.
- Highlighting the role of electronic management in sports organizations in general and sports facilities in particular, which shows how meeting the requirements of electronic management is reflected in improved facility performance, in line with modern management policy for sports facilities, raising their efficiency and helping them achieve their objectives.
- The scarcity of studies that address the requirements in Algerian sports facilities in a precise and systematic way, which makes this study a scholarly addition to Algerian research literature.

3. Conceptual Framework

3.1 Management

Fayol defines management as forecasting, planning, organizing, commanding, and controlling (Fayol, 1949, p. 5). John Lee describes it as the art of obtaining maximum results at minimum cost (Lee, 2001, p. 12). More recently, management has been defined as the process of coordinating human and material efforts to achieve specific goals efficiently and effectively (Daft, 2021, p. 8).

Operational definition: All administrative activities—planning, control, organization, and motivation—aimed at achieving the objectives of sports complexes within the available resources.

3.2 Electronic Management

Electronic management is defined as "an integrated system that aims to transform routine administrative work from manual management into computer-based management, relying on powerful information systems that help make administrative decisions as quickly and as cheaply as possible" (Al-Salmi, 2008, p. 23). Al-Momani and Al-Qurashi (2011, p. 87) defined it as "the use of information and communication technologies in all administrative processes,

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including planning, organizing, directing, and controlling, with the aim of improving performance and delivering high-quality services."

Operational definition: The administrative work carried out by an employee using computers, the Internet, and the various information and communication technologies, which aims to save effort and time and to achieve the satisfaction of both employees and sports facilities.

3.3 Sports Facilities

According to Executive Decree No. 91-416 of 2 November 1991, sports facilities are any structure equipped for sporting activity that falls under the authority of [term unclear in the Arabic source], as well as multi-sports complexes and stadiums that fall under the authority of the administration in charge of youth and sports (Journal Officiel, 1991, p. 1). Operationally, they can be defined as "any building or real estate intended for the practice of physical and sporting activities, which also includes all fixed or mobile structures, equipment, and sports supplies."

4. Related Studies

4.1 Arabic-Language Studies

Zaoui et al. (2021). This study, entitled "Requirements for Implementing Electronic Management in Sports Facilities in Algeria," aimed to identify the most important requirements that allow electronic management to be implemented successfully in Algerian sports facilities. The researchers used the descriptive method with a purposive sample of 35 managers of sports facilities in the provinces of M'sila and Bordj Bou Arréridj, and they used a questionnaire as the study instrument. The results indicated that human resources, material resources, and the technical dimension are essential requirements that contribute to the successful implementation of electronic management in sports facilities in Algeria.

Izian and Guermache (2025). Entitled "The Impact of Electronic Management Obstacles on the Management of Sports Bodies," this study aimed to examine how obstacles to electronic management affect the management of sports bodies, through a field study at the Directorate of Youth and Sports of Aïn Defla Province. The results revealed multiple obstacles that prevent the optimal implementation of electronic management in sports bodies, most notably technical, human, and organizational obstacles.

Layaida (2025). Entitled "The Role of Electronic Management in Improving Management Functions in Sports Institutions," this study aimed to determine the extent to which electronic management is applied in sports institutions and the degree to which it contributes to improving administrative functions from the employees' point of view. The researcher used the descriptive-analytical method with a simple random sample of 140 administrative staff members in various directorates of youth and sports in the provinces of M'sila, Bordj Bou Arréridj, Sétif, Batna, Constantine, Souk Ahras, and Annaba. The results showed that sports institutions provide the components of electronic management at a moderate level and that electronic management contributes substantially to improving administrative functions.

Ammar and Zine (2025). Entitled "Electronic Management and Its Relationship to the Success of Sporting Events in Sports Facilities: A Field Study of the Imam Ilyes Multi-Sports Complex in Médéa," this study aimed to uncover the nature of the relationship between electronic management and sporting events in sports facilities. To this end, it examined how employing

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electronic management relates to improving the efficiency of planning and organizing sporting events and to reducing the time and effort spent on event-organization procedures.

Salah Eddine (2025). Entitled "Digital Transformation in Sports Management and Its Impact on Operational Efficiency in Sports Facilities," this study aimed to shed light on the effect of digital transformation in sports management on operational efficiency within sports facilities. The results showed that digitization contributes effectively to raising efficiency but faces challenges, chiefly weak infrastructure and a shortage of competencies. The study recommends investing in digital infrastructure and professional training to ensure the success of digital transformation in the sports field.

Layadi and Batli (2025). This study aimed to identify the role of administrative requirements in developing electronic management applications in sports institutions and associations in Algeria. The researchers adopted the descriptive-analytical method and used a questionnaire with a sample of 45 respondents drawn from the staff of the Directorates of Youth and Sports of Bordj Bou Arréridj and Sétif. The results pointed to a strong correlational relationship between the strategic plans laid down and the development of electronic management applications, and to a relationship between re-engineering the organizational structure and electronic management applications in sports institutions.

4.2 Foreign-Language Studies

Ratten (2020). Entitled "Sport Entrepreneurship and Digital Transformation," this study aimed to explore the impact of digital transformation on sport entrepreneurship and on the management of sports facilities. The results showed that digital technology contributes to improving the efficiency of sports facility management, enhancing the user experience, and creating new opportunities for growth.

Mihai (2021). Entitled "Digital Transformation in Sports Organizations," this study aimed to analyze the impact of digital transformation on the organizational performance of sports organizations. The researcher used a quantitative approach with a sample of 120 sports managers in Europe. The results showed that digital transformation contributes to improving operational efficiency, increasing transparency, and reducing costs.

Brynjolfsson and McAfee (2017). Entitled "The Business of Artificial Intelligence," this study aimed to analyze the impact of artificial intelligence and digital technologies on organizational performance. The results showed that organizations that adopt digital transformation achieve better performance than their counterparts that rely on traditional methods.

Al-Farsi and Al-Hinai (2020). Entitled "The Role of E-Management in Enhancing Organizational Performance: A Theoretical Perspective," this study aimed to analyze the relationship between electronic management and organizational performance. The results showed that electronic management contributes to improving efficiency, effectiveness, and transparency in organizations.

4.3 Commentary on the Previous Studies

A review of the previous studies shows that most of them focused on electronic management in sports organizations in general, on the obstacles to its implementation, or on its role in improving performance. Most of these studies agree that human resources, material

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resources, and the technical dimension are basic requirements for implementing electronic management.

It is also noticeable that the previous studies vary in sample size and methodology; sample sizes ranged from 15 to 140 employees. The present study is distinguished from earlier ones by its focus on identifying the requirements precisely and systematically through three main axes—human resources, material resources, and the technical dimension—and by its use of the chi-square test to verify the significance of statistical differences, as well as means and standard deviations to gauge the sample's attitudes more accurately.

5. Methodology

5.1 Study Approach

The researchers adopted the **descriptive-analytical method** because it suits the nature of the topic. This method is concerned with collecting data, reports, or quantitative tables, or both, and it relies on studying a phenomenon as it exists in reality and describing it accurately (Bouhouch, 2001, p. 136).

5.2 Study Population and Sample

Study population: The study population consists of all managers of the sports facilities under the Office of the Multi-Sports Complex of Bouira Province, totaling 24 managers and administrative staff.

Study sample: A sample is defined as "a part of the study population from which field data are collected; it is part of the whole, meaning that a group of the population's members is taken so as to be representative of the research population" (Al-Tayeb, 1999, p. 292). Selecting the sample is one of the most difficult stages of scientific research; it is the method, or the tool, through which researchers obtain data and information about the phenomenon under study.

In the present study, out of a concern to reach results that are more accurate, objective, and faithful to reality, we selected the sample by **comprehensive enumeration**. It included the supervisors of the units under the Office of the Multi-Sports Complex of Bouira Province. The sample was not restricted by any particular characteristics or attributes, and its size was 24 managers and administrative staff of the sports facility.

Justification of the small sample size: A sample of 24 is statistically small, but the use of comprehensive enumeration justifies it, since the sample represents the entire original population. This type of exploratory study is appropriate for new topics that have not been sufficiently researched, and it provides preliminary indicators on which broader future studies can build (Hair et al., 2019, p. 45).

5.3 Study Variables

Independent variable: This is the factor whose effect on the phenomenon under study the researcher wishes to measure; it is usually known as the experimental variable or factor. In our study, it is "the mechanisms and requirements of implementing electronic management."

Dependent variable: This is the variable that results from the independent factor in the phenomenon. In our study, the dependent variable is "Algerian sports facilities."

5.4 Study Instrument

The researchers used a questionnaire as the main data-collection instrument. It consisted of three main axes:

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- **Axis 1:** Human resources (6 items).
- **Axis 2:** Material resources (6 items).
- **Axis 3:** Technical dimension (6 items).

A three-point Likert scale (Yes = 3, Somewhat = 2, No = 1) was used to measure the responses of the sample members.

5.5 Validity and Reliability of the Instrument

Validity: The validity of the instrument was verified by submitting it to a group of expert referees specializing in sports management and scientific methodology, and the necessary amendments were made in accordance with their opinions.

Reliability: Cronbach's alpha was calculated to verify the reliability of the instrument. Its value was 0.814 for all questionnaire items, a high value that indicates the instrument's suitability for use.

Table 1

Cronbach's alpha coefficients for the questionnaire axes

Axis	Number of items	Cronbach's alpha
Human resources	06	0.885
Material resources	06	0.763
Technical dimension	06	0.792
All questionnaire items	**18**	**0.814**

5.6 Statistical Methods

The researchers used the following statistical methods:

- Frequencies and percentages.
- Means and standard deviations.
- The chi-square (χ^2) test, to test the significance of the differences between observed and expected frequencies.
- Cronbach's alpha coefficient, to measure reliability.

5.7 Limits of the Study

- **Spatial limits:** The Rabah Bitat Multi-Sports Complex in Bouira Province and its affiliated units.
- **Temporal limits:** The field study was completed over 25 days, divided between the theoretical and applied parts.
- **Human limits:** The managers and administrative staff of the sports facilities under the Office.

6. Results and Discussion

6.1 Results of Axis 1: Human Resources

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Table 2

Results for the items of Axis 1: Human resources

No.	Statement	Predominant response	Freq.	%	Mean	SD	Calculated χ^2	Tabulated χ^2	Significance
01	There are IT specialists who monitor electronic devices and systems.	Yes	18	75%	2.58	0.65	19	5.99	Statistically significant
02	Recruitment competitions are held to hire IT specialists.	Yes	16	67%	2.42	0.83	13	5.99	Statistically significant
03	Internships and training courses in the field of IT are provided.	Yes	17	71%	2.50	0.78	8	5.99	Statistically significant
04	External specialists are called in when a problem arises.	Yes	20	83%	2.75	0.53	15.5	5.99	Statistically significant
05	Material and moral incentives are provided to employees.	Yes	20	83%	2.75	0.53	23	5.99	Statistically significant

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No.	Statement	Predominant response	Freq.	%	Mean	SD	Calculated χ^2	Tabulated χ^2	Significance
06	The institution shares skills and innovations with other sports institutions.	No	16	67%	1.58	0.83	12	5.99	Statistically significant

Note. Freq. = frequency of the predominant response; % = percentage of respondents; SD = standard deviation.

Analysis:

The results in the table above reveal statistical significance for all items of Axis 1. The calculated χ^2 values were 19, 13, 8, 15.5, 23, and 12, respectively, all of which exceed the tabulated χ^2 of 5.99 at 1 degree of freedom and a significance level of $\alpha = 0.05$. This means that the respondents' answers were not random but expressed a clear tendency toward answering "Yes" on five of the six items, which confirms that human resources constitute a fundamental pillar of the successful implementation of electronic management in sports facilities. The high means (between 2.42 and 2.75) reinforce this result, while the low standard deviations (between 0.53 and 0.83) indicate that the respondents' answers were closely clustered rather than dispersed, which increases the credibility of the results.

This result reflects the stage that Algerian sports facilities are going through, in which the need for specialized human competencies capable of handling modern electronic systems has become pressing, particularly given the rapid digital transformation under way in the sports sector worldwide (Ratten, 2020, p. 260). Moreover, the high level of agreement with the statement "External specialists are called in when a problem arises" (83%, mean = 2.75) suggests that managers are aware of the importance of drawing on external expertise but, at the same time, reveals an internal shortage of specialized competencies. This is consistent with Mihai's (2021, p. 318) observation that European sports organizations also suffer from a shortage of digital skills despite their technological superiority.

These findings agree with those of Zaoui et al. (2021), who confirmed that human resources are a basic requirement for implementing electronic management, and they accord with the results of Layaida (2025), who indicated that sports institutions urgently need to develop their human competencies in order to meet the requirements of electronic management. By contrast, this result differs in part from that of Izian and Guermache (2025), whose study focused on obstacles more than on requirements, which reflects differences in research approaches across studies.

As for the statement "The institution shares skills and innovations with other sports institutions," on which the predominant response was "No" (67%, mean = 1.58), it points to a deficit in coordination and knowledge exchange among sports facilities. This is a negative

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factor given the need for integrated efforts to achieve the desired digital transformation. Brynjolfsson and McAfee (2017, p. 8) emphasize that knowledge sharing among organizations is a key driver of digital innovation, which is precisely what the Algerian context lacks in this area.

6.2 Results of Axis 2: Material Resources

Table 3

Results for the items of Axis 2: Material resources

No.	Statement	Predominant response	Freq.	%	Mean	SD	Calculated χ^2	Tabulated χ^2	Significance
01	The facility provides the necessary electronic devices.	Yes	18	75%	2.58	0.65	19.75	5.99	Statistically significant
02	The institution follows new developments at electronic exhibitions.	Yes	16	67%	2.42	0.83	13	5.99	Statistically significant
03	The institution regularly maintains electronic devices.	Yes	17	71%	2.50	0.78	16.75	5.99	Statistically significant
04	The institution concludes agreements with leading information technology companies.	Yes	20	83%	2.75	0.53	27.25	5.99	Statistically significant

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No.	Statement	Predominant response	Freq.	%	Mean	SD	Calculated χ^2	Tabulated χ^2	Significance
05	The institution adopts a strategy of relying on electronic management in all departments.	No	14	58%	1.75	0.94	5.99	5.99	Statistically significant
06	The institution builds modern, integrated electronic systems.	Yes	18	75%	2.58	0.65	5.99	5.99	Statistically significant

Note. Freq. = frequency of the predominant response; % = percentage of respondents; SD = standard deviation.

Analysis:

The results for Axis 2 confirm statistical significance for all of its items: the calculated χ^2 values ranged from 5.99 to 27.25, all of them greater than or equal to the tabulated value (5.99). These results reflect that material resources of various kinds—devices, software, and agreements with technology companies—form the backbone of successful electronic management, which is consistent with the technical nature of electronic management, inconceivable without a solid physical infrastructure. The relatively high means (between 1.75 and 2.75) support this result, noting that the standard deviation for the statement "The institution adopts a strategy of relying on electronic management in all departments" was 0.94, the highest on this axis, which indicates variation in the respondents' views on this particular point.

It is also noteworthy that the highest χ^2 value (27.25) was obtained for the statement "The institution concludes agreements with leading information technology companies," with an agreement rate of 83% and a mean of 2.75. This indicates that the facility under study attaches great importance to external technology partnerships, a positive step in its digital transformation path, and one that is in line with Al-Farsi and Al-Hinai's (2020, p. 50) assertion that technology partnerships are a cornerstone of successful electronic management. However, the predominant response to the statement "The institution adopts a strategy of relying on electronic management in all departments" was "No" (58%, mean = 1.75), which reveals the absence of a comprehensive strategic vision for electronic management and the confinement of its implementation to limited areas rather than its extension to all departments and sections.

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These results are consistent with those of the study on the contributions of electronic management (Layaida, 2024), which recommended equipping sports institutions with technical infrastructure, equipment, devices, networks, and modern software. They also accord with the recommendations of Salah Eddine (2025), who stressed the need to invest in digital infrastructure to ensure the success of digital transformation, and with the findings of Layadi and Batli (2025), which showed a relationship between the strategic plans laid down and the development of electronic management applications. This confirms that the absence of a comprehensive strategy is an obstacle to extending electronic management across the organization. The result also agrees with that of Ratten (2020, p. 260), who found that digital transformation in sports organizations requires a comprehensive strategy that is not confined to the technological side alone.

6.3 Results of Axis 3: Technical Dimension

Table 4

Results for the items of Axis 3: Technical dimension

No.	Statement	Predominant response	Freq.	%	Mean	SD	Calculated χ^2	Tabulated χ^2	Significance
01	The facility has consultants in the field of modern electronic systems and software.	Yes	20	83%	2.75	0.53	27.25	5.99	Statistically significant
02	Management is inclined to rely on electronic systems and applications.	Yes	19	79%	2.67	0.56	22.75	5.99	Statistically significant
03	Electronic portals are used in sports services.	Yes	18	75%	2.58	0.65	19.75	5.99	Statistically significant
04	Electronic security and information confidentiality are ensured.	Yes	17	71%	2.50	0.78	16.75	5.99	Statistically significant

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No.	Statement	Predominant response	Freq.	%	Mean	SD	Calculated χ^2	Tabulated χ^2	Significance
05	Training courses on the use of electronic systems are organized.	Yes	16	67%	2.42	0.83	13	5.99	Statistically significant
06	Software and applications are updated regularly.	Yes	18	75%	2.58	0.65	19.75	5.99	Statistically significant

Note. Freq. = frequency of the predominant response; % = percentage of respondents; SD = standard deviation.

Analysis:

The results for Axis 3 indicate statistical significance for all of its items. The calculated χ^2 values (27.25, 22.75, 19.75, 16.75, 13, and 19.75) were greater than the tabulated value (5.99), which reflects a clear tendency among the respondents to answer "Yes" on all items of this axis. This is attributed to the growing awareness of the importance of the technical dimension for the success of electronic management, especially in light of rapid technological development and the need for sports facilities to keep pace with it. The high means (between 2.42 and 2.75) and low standard deviations (between 0.53 and 0.83) confirm this result and indicate that the respondents' views were closely aligned on the importance of the technical dimension.

The results also show that the highest agreement rate (83%) was recorded for the statement "The facility has consultants in the field of modern electronic systems and software," with a mean of 2.75. This is a positive indicator that the facility under study recognizes the importance of drawing on specialized technical expertise, and it is consistent with Daft's (2021, p. 8) assertion that modern organizations need digital specialists to ensure the success of digital transformation. In addition, the agreement rate for the statement "Management is inclined to rely on electronic systems and applications" reached 79% with a mean of 2.67, which reflects an administrative will toward digital transformation, although this will still needs to be translated into practice on the ground.

These results agree with those of Ammar and Zine (2025), who pointed to the importance of employing electronic management to enhance the efficiency of planning and organizing processes, and with those of Layadi and Batli (2025), who found a relationship between re-engineering the organizational structure and electronic management applications. They also accord with the findings of Layaida (2025), which showed that electronic management contributes substantially to improving administrative functions—something that can be achieved only when the appropriate technical dimension is in place. This result likewise agrees with that of Mihai (2021, p. 322), who found that digital transformation in European sports

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organizations requires an integrated technical base that includes modern systems, applications, and software.

In light of the results presented, it can be said that the three hypotheses of the study have been confirmed: the results showed that human resources, material resources, and the technical dimension are among the essential requirements that contribute substantially to the successful implementation of electronic management in sports facilities in Algeria. This agrees with the general hypothesis of the study and with the results of many previous studies that stressed the importance of these requirements, foremost among them the study by Zaoui et al. (2021), which is the closest to the present study in terms of objectives and methodology.

7. Conclusion

This study aimed to identify the human, material, and technical requirements for implementing electronic management in Algerian sports facilities, through a field study of the Rabah Bitat Multi-Sports Complex in Bouira Province. The results showed that human resources, material resources, and the technical dimension are among the essential requirements that contribute substantially to the successful implementation of electronic management: all items on the three axes were statistically significant at the $\alpha = 0.05$ level, and the means ranged from 1.58 to 2.75, which reflects a strongly positive orientation toward the importance of these requirements.

These results indicate that Algerian sports facilities need greater investment in qualified human resources, modern material resources, and advanced technical systems and applications, in order to keep pace with global technological transformations and improve the quality of their administrative services. The results also underline the need to adopt a comprehensive electronic management strategy that is not confined to limited areas but covers all departments and sections, together with the provision of the necessary financial and human support.

Recommendations

In light of the results reached, the researchers recommend the following:

- Work to attract outstanding human talent in the field of electronic management.
- Provide the modern equipment and software needed to implement electronic management.
- Organize specialized training courses on the implementation of electronic management for all employees.
- Conclude agreements with leading institutions in the field of modern technology for training and the transfer of expertise.
- Develop the technical infrastructure, including networks, devices, and software.
- Adopt a comprehensive electronic management strategy that covers all departments and sections.
- Increase the budget allocated to the technological modernization of sports facilities.
- Develop a national strategy for implementing electronic management in sports facilities.
- Encourage partnerships between sports facilities, universities, and research centers.
- Establish a unified digital platform for exchanging skills and expertise among sports facilities.
- Conduct similar studies in other provinces in order to generalize the results.

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- Study the obstacles to implementing electronic management in sports facilities.
- Study the impact of electronic management on the quality of sports services.
- Use more advanced statistical tools, such as regression analysis and structural equation modeling.

Future researchers could expand on this field by:

- Studying the relationship between electronic management and the satisfaction of users of sports services.
- Analyzing the impact of electronic management on transparency and the fight against corruption in the sports sector.
- Studying leading international experiences in implementing electronic management in sports facilities.
- Conducting longitudinal studies to track the development of electronic management implementation in Algerian sports facilities.

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