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Designing a Sports Event Management Model with an Artificial Intelligence Approach

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A B S T R A C T

In recent years, artificial intelligence (AI) has demonstrated its superiority across various domains within the broad spectrum of sports event management, leading to an increased adoption of AI in the sports industry. AI is now the subject of the most precise and in-depth research conducted globally. Therefore, this study aims to identify the essential factors of social acceptance of artificial intelligence (AI) in the field of sports event management and to design a sports event management model with an AI approach. Given that the data used in this research for importance weighting, refinement, classification, and determining the relationships between model components were derived from a persuasive Delphi survey of experts in the model design section, and for validating the proposed model, a questionnaire survey tool was used with stakeholders and responsible parties, the type of research in terms of the design used is survey-based. Ultimately, in the present study, a judgmental survey approach was employed for importance weighting and data refinement, and then the data were quantified based on fuzzy logic and utilized multi-criteria quantitative approaches. Thus, the overall method or type of research in terms of the nature and type of data and methods used is of the "mixed method" type. In this research, based on previous studies, the relationship between social acceptance or successful application of AI technologies as a dependent variable and organizational will, senior management inclination, compatibility and adaptability, government support, competitive pressure, and relative advantage as explanatory variables were examined. According to the results obtained, among the main factors influencing social acceptance or the successful application of AI technologies in the field of sports event management in Iran, the priorities are as follows: 1. Senior management inclination, 2. Relative advantage, 3. Organizational will, 4. Competitive pressure, 5. Compatibility and adaptability, and 6. Government support. AI will become an integral part of every institution worldwide in the long term; using AI in sports event management is not a trend but a scientific necessity.

Keywords: *artificial intelligence, event, model, sports event management, machine learning.*

1. Introduction

Artificial intelligence (AI) is emerging across the entire sports industry. Defining intelligence is a challenging task. While we all understand what we mean by intelligence, providing an exact description is not simple. Setting aside feelings and self-awareness, a precise description of intelligence could be the ability to learn new skills, assimilate knowledge, and apply them in new situations to achieve a desired outcome. Given the difficulty of defining intelligence, defining AI precisely is also not straightforward. Simply put, if a computational device can perform a task that typically requires human reasoning and intelligence, it is said to use AI. The ideal feature of AI is its ability to be logical and make the best decisions to achieve a specific goal. AI is based on the premise that scientists believe human intelligence can be defined in a way that machines can mimic it, performing tasks from the simplest to the most complex (Keiper et al., 2023; Sennaar, 2019).

With advancements in sports management and organizations, sports management is gradually moving away from its traditional form towards specialization, as the traditional form cannot meet the fundamental needs of modern sports. The number of tasks interconnected through information and communication technology across the globe is increasing daily. Consequently, sports events are expected to identify innovative opportunities and gain a competitive advantage from these opportunities to ensure organizational survival, generating profit and value for society (Zhang, 2016).

The use of AI in decision-making and other managerial tasks is inevitable in the present era and is one of the most important methods for gaining a competitive advantage for any organization. In fact, organizations cannot hope to survive and thrive without AI and expert systems, and sports organizations at the lower levels of sports event management are no exception (Atasoy et al., 2021).

With the backdrop of big data, the integration and development of modern AI technologies, and the increasing complexity of sports and the resultant big data, there is a pressing need for integration and development. The amount of information related to sports, especially sports event information on the internet, has increased significantly (Dugalić, 2018). In the present era, issues arise that cannot be solved with past solutions. Meeting expectations depends on the proper and effective management of events. Looking at the challenges of organizing a sports event reveals that financial resources, marketing, and sponsorships, ticket pricing, organization, risk and quality management, evaluation, and control are practical problems that management faces. The major characteristic of today's issues is the large volume and breadth of data and information that must be collected, stored, produced, processed, retrieved, and analyzed to establish a comprehensive model for sports event management based on AI (Wang, 2021).

AI is essentially written software that can provide its conclusions about methods to achieve a goal. All human activities that can be replaced by technology could be fully carried out by AI in the future. AI is a profoundly complex science in the current century, which broadly involves studying information, how to collect and store it, utilizing information, and transferring it to machines or humans. It significantly enhances the ability to find high-quality solutions for difficult optimization problems, aiding better managerial decision-making (De Cremer & Kasparov, 2021).

Given the extensive coverage of sports events in mass media, the execution of these events can be seen as a model of management at the societal level. Event management requires using business management skills to conceptualize, plan, and execute social and business-related events. Event management includes conceptualizing ideas, planning, budgeting, organizing, and holding events, forming a powerful combination of technical and creative skills to create and deliver a focused event for a specific target audience. To achieve this perfect combination, comprehensive sports event management models based on AI should not be overlooked (Liu et al., 2023).

Considering the networked data of major sports events fundamentally meets the needs of players, spectators, supporters, managers, organizers, policymakers, and other stakeholders by providing appropriate sports event information and enhancing the interactive experience of users, especially in sports event management using sports information resources (Sennaar, 2019). Simultaneously, introducing recommendation algorithms based on AI technology in sports event management can enhance the utilization and relevance of sports information resources. This not only provides technical support for personalized and professional information services to sports event managers and other stakeholders and sports enthusiasts but also improves the overall intelligence level of sports information, promoting the development of the sports

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industry, especially improving sports event management in less developed countries like Iran (Xia et al., 2020).

Effective and efficient management of sports events, which can be facilitated and enhanced by leveraging new technologies such as AI, is crucial for conducting a flawless event without any issues. Besides, one of the important duties of any manager in a sports organization is to plan, organize resources and equipment, attract voluntary and public participation, employ material and technical support from sponsors, and properly manage the operational aspects of sports events. Every manager should be aware of all potential changes that could be beneficial for sports events (Ratten, 2020).

The lack of access to information systems and the resistance of sports event management officials to change are challenges faced by the traditional management perspective. Advanced sports event management, however, is more objective, participatory, and group-oriented, with tasks performed independently of a particular individual. Timely access to information has prepared new sports event management systems for change, utilizing new methods instead of repetitive and old ones in conducting events (Alzoubi et al., 2023).

AI can now be considered a key player in digital transformation. According to the WC Institute's forecast, the development of AI applications will contribute approximately $15.7 trillion to the global economy by 2030. Each country's share of this growth varies according to its level of development (Fister et al., 2015).

The goal of AI is to bring the behavior and response of a computer system closer to the patterns on which humans act and respond. Sometimes systems are designed whose analytical power surpasses that of humans; this can assist managers in organizing events well, especially in critical situations like holding major sports events where there is a large volume of information and numerous influencing factors (Pretorius & Parry, 2016).

The future of sports event management undoubtedly depends on AI, but we are certainly not at the final frontier yet. In fact, we are probably only at the beginning, which is exciting. Sports are now at a point where they are ready to embrace AI, not to change the outcome of sports events but to improve the decision-making process. This study is an initial examination of the adoption of AI applications at the organizational level of sports event management in Iran. It designs and validates an integrated model based on the positivist approach of existing theories and empirical evidence from previous research. This study lays the foundation for future research on why and how organizations use AI. Therefore, this study aims to identify the essential factors of social acceptance of artificial intelligence (AI) in the field of sports event management and to design a sports event management model with an AI approach.

2. Methods and Materials

Given that the data used in this research for importance weighting, refinement, classification, and determining the relationships between model components were derived from a persuasive Delphi survey of experts in the model design section, and for validating the proposed model, a questionnaire survey tool was used with stakeholders and responsible parties, the type of research in terms of the design used is survey-based. Ultimately, in the present study, a judgmental survey approach was employed for importance weighting and data refinement, and then the data were quantified based on fuzzy logic and utilized multi-criteria quantitative approaches. Thus, the overall method or type of research in terms of the nature and type of data and methods used is of the "mixed method" type. The research process was defined in the following steps:

Step 1: A semi-structured or unstructured questionnaire was used to gather experts' opinions on measuring certain research variables.

Step 2: Selecting experts, explaining the problem to them, and conducting interviews.

Step 3: Analyzing the findings from the questionnaire.

Step 4: Analyzing the MICMAC and determining the relationships between variables based on expert opinions and proposing the model.

Step 5: Randomly selecting responsible parties to validate the proposed model based on a written survey.

Step 6: Analyzing the relationships between model components and validating it based on the path analysis approach using structural equation modeling and appropriate tests to generalize the impact of model components.

Given the study's aim, two distinct statistical populations were used in two stages: 1) designing the proposed model and 2) validating the proposed model. For designing the final questionnaire, the statistical population included experts, university professors, specialists, opinion leaders, or experienced policymakers in sports management, especially sports event management, AI, and the

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intersection of these two fields as experts. The sample was selected using a non-random snowball method, with eight individuals chosen to survey regarding the model's components, classification, and importance. On the other hand, to determine the type and level of relationships between the proposed model components, the statistical population for quantitative measurement of the research included senior sports managers knowledgeable about organizing sports events (80 individuals), sports management professors knowledgeable about organizing sports events (35 individuals), experienced and knowledgeable policymakers and experts in organizing sports events (110 individuals), totaling 225 individuals as a targeted and limited population, using a complete enumeration method.

In this research, the ADF Fisher test was used to determine reliability. Additionally, from the second statistical population or stakeholders and responsible parties in sports event management, a random pilot sample of 15 individuals was selected, and the questionnaire was distributed and collected among them. After two weeks, the same pilot sample was surveyed again, and the correlation test between the results and the ADF Fisher test indicated acceptable reliability of the survey tool.

Finally, for validating the constructs of the questionnaires used for surveying stakeholders or responsible parties in sports event management, Cronbach's alpha was calculated and evaluated for the distributed questionnaires in the random pilot sample. Given that the average Cronbach's alpha for the entire questionnaire was 0.785, and for each question ranged from 0.721 to 0.893, it was reliable in all cases, exceeding the 0.7 reliability threshold in human sciences. It should be noted that the first part of the questionnaire contained questions related to the identity dimensions, or demographic characteristics, of the statistical sample. The main part of the questionnaire was designed in six sections: organizational will, senior management inclination, compatibility and adaptability, government support, competitive pressure, and relative advantage, with a total of 24 questions. The purpose of the questionnaire was to identify the essential factors for the social acceptance of AI in sports event management in Iran and to design a model based on it. Since the variables were defined using a quantitative range, mostly on a scale of 1 to 9, the Kolmogorov test was used to assess the normality of the response distribution. This test was a prerequisite for using factor analysis and structural equation modeling methods. Additionally, diagnostic tests such as KMO, Bartlett's test of sphericity, and model fit estimation tests were employed.

3. Findings and Results

Given that understanding the demographic characteristics of the sample can be useful for generalizing the results to other statistical populations considering similarities in general characteristics, this section describes the demographic characteristics of the respondents based on the collected demographic data:

From the sample of 8 individuals in the study, all 8 individuals, equivalent to 100% of the total sample, were male. Two individuals were single, accounting for 25% of the total sample. The remaining sample, i.e., 6 individuals, were married, accounting for 75% of the total sample. Four individuals from the sample were aged between 30 and 40 years, comprising 50% of the total sample. Two individuals were aged between 40 and 50 years, representing 25% of the total sample. From the total sample, one individual was under 30 years old, and one individual was over 50 years old, with the frequency percentage for these two categories being 12.5%. Among the 8 individuals in the study, 3 had a PhD, accounting for 37.5% of the total sample. The frequency of individuals who were doctoral and master's students was 2 and 2, respectively, equivalent to 25% and 25% of the total sample. Four individuals from the sample had 10 to 15 years of experience, making up 50% of the total sample. The frequency of individuals with 15 to 20 years of experience was 2, representing 25% of the total sample. Two individuals had over 20 years of experience, with this category comprising 25% of the total sample. Additionally, the number of individuals with less than 10 years of experience was 25% of the total sample.

According to the results obtained from the experts, the main factors influencing the social acceptance or successful application of AI technologies in the field of sports event management in Iran, in order of priority, are 1. Senior management inclination, 2. Relative advantage, 3. Organizational will, 4. Competitive pressure, 5. Compatibility and adaptability, and 6. Government support.

The results of the gender distribution assessment of the respondents showed that the majority of survey participants were male (202 individuals, equivalent to 90.1% of the total), with only 23 individuals, equivalent to 9.9%, being female.

The results of the marital status distribution assessment of the respondents showed that the majority of survey

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participants were married (165 individuals, equivalent to 73.4% of the total), with only 60 individuals, equivalent to 26.6%, being single.

Most of the survey participants were aged over 40 years, accounting for about 44.9% of the total. Individuals aged between 31 and 40 years were 82 in number, equivalent to 36.4% of the total participants. The least frequency was for individuals aged 20 to 30 years (42 individuals, equivalent to 18.7%).

Most of the employees participating in the survey had a master's degree (151 individuals, equivalent to 67.1%). Among them, 50 individuals, equivalent to 22.2%, held a doctoral degree. Finally, 17 individuals, or 7.5%, had a bachelor's degree, and 7 individuals, or 3.6%, had an associate degree.

Five individuals, equivalent to 2.2%, had less than 5 years of experience, 30 individuals, equivalent to 13.3%, had between 5 and 10 years of experience, 77 individuals, equivalent to 34.2%, had between 11 and 15 years of experience, 73 individuals, equivalent to 32.4%, had between 16 and 20 years of experience, and finally, 40 individuals, equivalent to 17.8%, had over 20 years of experience.

The first independent variable in this research is organizational will, which was evaluated with four measures.

Table 1

Importance Level of Organizational Will

Row	Code	Measure	Mean	Standard Deviation
1	ORE1	Developing a roadmap for AI utilization and execution plans	7.675	1.314
2	ORE2	Allocating budget for AI utilization in sports events	7.174	1.363
3	ORE3	Stakeholder and shareholder support for AI utilization in sports events	6.804	1.583
4	ORE4	Existence of a scheduled plan for AI implementation in sports events	6.896	1.566
Total			7.137	1.456

Based on Table 1, the average importance or impact of each influential factor based on the survey of managers, experts, and specialists was 7.137, with a standard deviation of 1.456.

The second independent variable in this research is senior management inclination, which was evaluated with four measures.

Table 2

Importance Level of Senior Management Inclination

Row	Code	Measure	Mean	Standard Deviation
1	MCP1	Inclination and will of senior sports managers to utilize AI	7.112	1.327
2	MCP2	Managers' inclination to acquire knowledge and information related to AI in sports	7.489	1.415
3	MCP3	Managers' inclination to enhance their skills in AI utilization	7.414	1.325
4	MCP4	Inclination of sports organization managers to develop interactions with national AI organizations	7.643	1.238
Total			7.159	1.436

Based on Table 2, the average importance or impact of each influential factor based on the survey of managers, experts, and specialists was 7.159, with a standard deviation of 1.436.

The third independent variable in this research is compatibility and adaptability, which was evaluated with four measures.

Table 3

Importance Level of Compatibility and Adaptability

Row	Code	Measure	Mean	Standard Deviation
1	CPA1	Hardware environment compatibility for AI utilization	7.141	1.335
2	CPA2	Software environment compatibility for AI utilization	6.824	1.714
3	CPA3	Compatibility of information, knowledge, and skills of event staff for AI utilization	7.134	1.322
4	CPA4	Compatibility of event databases for AI utilization	6.655	1.786
Total			6.938	1.539

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Based on Table 3, the average importance or impact of each influential factor based on the survey of managers, experts, and specialists was 6.938, with a standard deviation of 1.539.

The fourth independent variable in this research is government support, which was evaluated with four measures.

Table 4

Importance Level of Government Support

Row	Code	Measure	Mean	Standard Deviation
1	GOV1	Establishment of the national AI center	7.997	0.806
2	GOV2	Government financial support for AI utilization in sports organizations	6.928	1.570
3	GOV3	Monitoring the implementation of the seventh development plan's mandate for maximum use of AI	7.243	1.426
4	GOV4	Scientific, educational, and technological support for AI productivity in sports organizations	7.404	1.378
Total			7.393	1.295

Based on Table 4, the average importance or impact of each influential factor based on the survey of managers, experts, and specialists was 7.393, with a standard deviation of 1.295.

The fifth independent variable in this research is competitive pressure, which was evaluated with four measures.

Table 5

Importance Level of Competitive Pressure

Row	Code	Measure	Mean	Standard Deviation
1	CPR1	Increasing inclination of global sports organizations to use AI	6.933	1.565
2	CPR2	Growing trend of AI utilization in major global events (continental, Olympics, World Cup)	7.104	1.405
3	CPR3	Utilization of AI by Asian and global competitors in sports	6.938	1.385
4	CPR4	Extensive and diverse AI utilization in managing top global sports clubs	6.365	1.730
Total			7.096	1.412

Based on Table 5, the average importance or impact of each influential factor based on the survey of managers, experts, and specialists was 7.096, with a standard deviation of 1.412.

The sixth independent variable in this research is relative advantage, which was evaluated with four measures.

Table 6

Importance Level of Relative Advantage

Row	Code	Measure	Mean	Standard Deviation
1	RAD1	Increased productivity of sports events using AI	6.983	1.411
2	RAD2	Improved customer and audience services at sports events using AI	7.065	1.384
3	RAD3	Reduced human error in organizing sports events using AI	7.684	1.094
4	RAD4	Easier organization of sports events using AI	7.071	1.294
Total			7.201	1.296

Based on Table 6, the average importance or impact of each influential factor based on the survey of managers, experts, and specialists was 7.201, with a standard deviation of 1.296.

The importance level of social acceptance or the successful application of AI technologies and the factors influencing it based on the survey of managers, experts, and specialists is depicted as follows:

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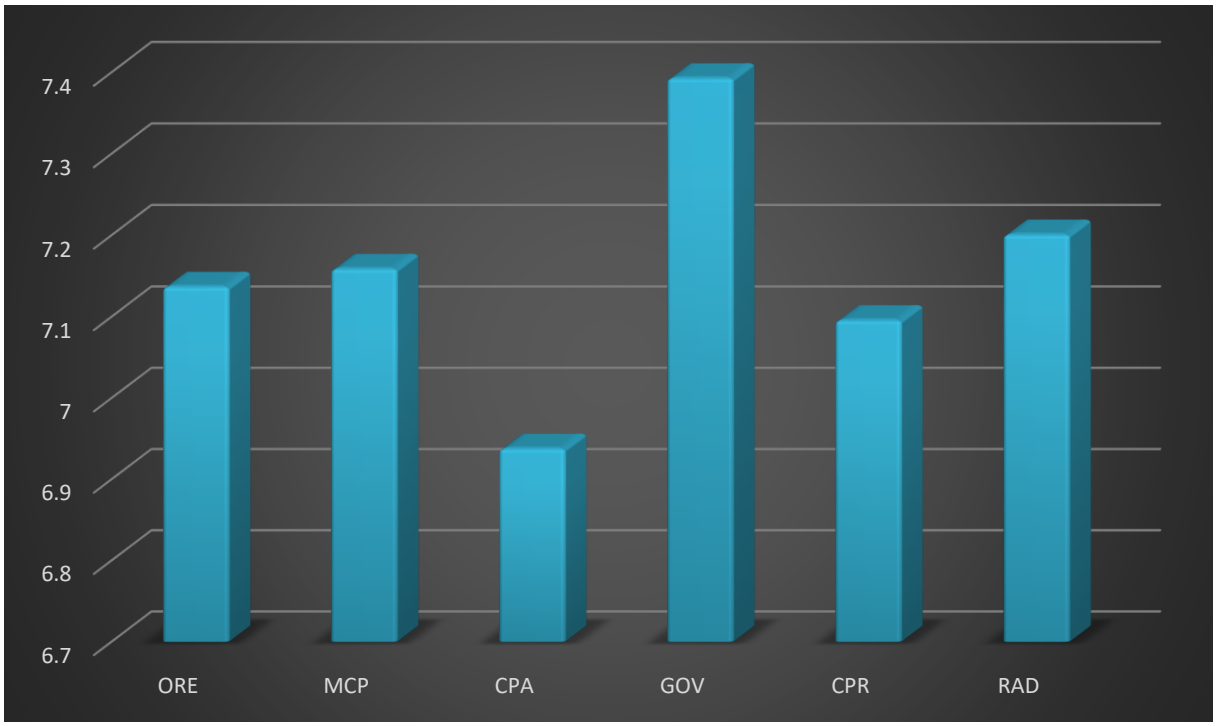
Figure 1

Importance Level of Social Acceptance or Successful Application of AI Technologies and Influencing Factors



To evaluate the relationship between social acceptance or the successful application of AI technologies and the influencing factors, advanced path analysis or structural equations were used. Accordingly, the structural equation model was estimated according to the conceptual model of the research and the final Table 7 in two dimensions: significance and standard.

Table 7

Level of Social Acceptance or Successful Application of AI Technologies and Influencing Factors

Row	Code	Number of Measures	Variable Description	Mean	Standard Deviation
1	ORE	4	Organizational will	7.137	1.456
2	MCP	4	Senior management inclination	7.159	1.436
3	CPA	4	Compatibility and adaptability	6.938	1.539
4	GOV	4	Government support	7.393	1.295
5	CPR	4	Competitive pressure	7.096	1.412
6	RAD	4	Relative advantage	7.201	1.296

In this section of the report, the hypotheses are examined using the results of the final model fitting with structural equation modeling. The output of the structural equation modeling shows the path diagram in the significance state. This model tests all measurement and structural equations using the Student's t-statistic.

Figure 2 shows the path coefficients between variables, and Figure 3 shows the t-statistic or significance level of the relationships between variables.

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Figure 2

Structural Model with Path Coefficients, Factor Loadings, and Explained Variances

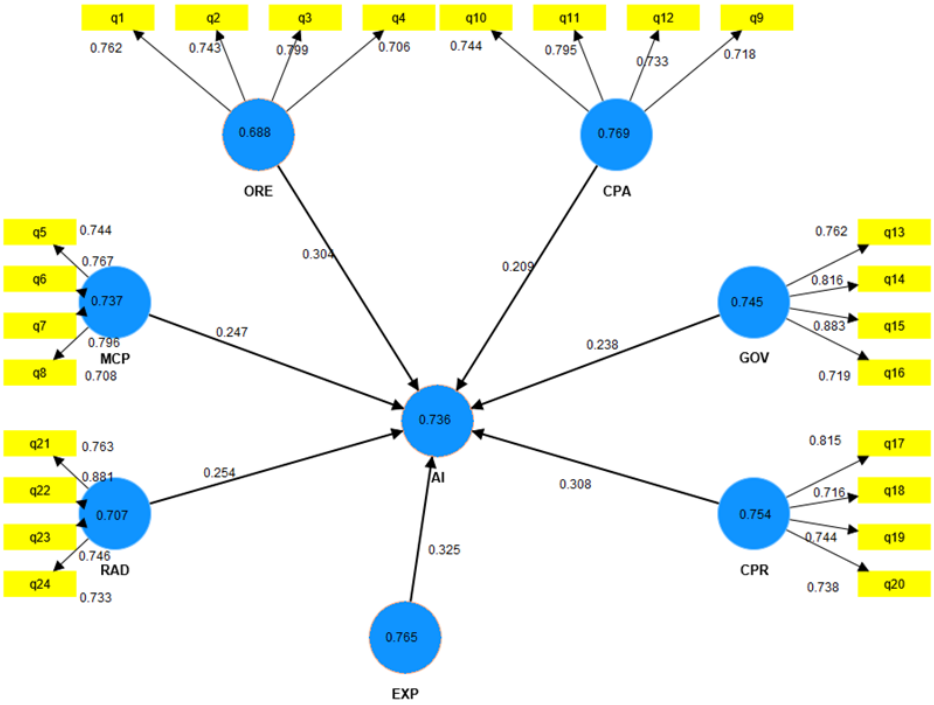
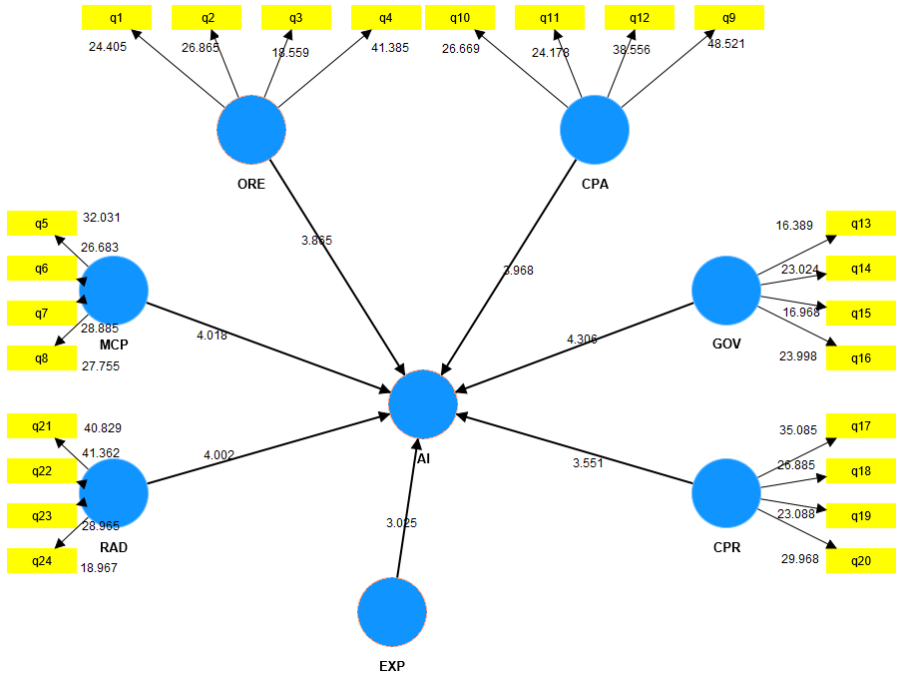


Figure 3

T-Statistics of Relationships Between Research Variables



In Table 8, the path coefficients, significance coefficients, and determination coefficients of the paths presented in the conceptual model of the research and the results of their confirmation or rejection are presented based on the structural equation modeling output.

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Table 8

Results of Structural Equation Modeling Execution

Row	Path	Path Coefficient	t-Statistic	Result	Determination Coefficient
1	Organizational will → Social acceptance or successful application of AI technologies	0.304	3.865	Confirmed	0.569
2	Senior management inclination → Social acceptance or successful application of AI technologies	0.247	4.018	Confirmed	0.408
3	Compatibility and adaptability → Social acceptance or successful application of AI technologies	0.209	3.968	Confirmed	0.446
4	Government support → Social acceptance or successful application of AI technologies	0.238	3.406	Confirmed	0.608
5	Competitive pressure → Social acceptance or successful application of AI technologies	0.308	3.551	Confirmed	0.519
6	Relative advantage → Social acceptance or successful application of AI technologies	0.254	4.002	Confirmed	0.638
7	Expected advantages → Social acceptance or successful application of AI technologies	0.325	3.025	Confirmed	0.429

4. Discussion and Conclusion

Based on path analysis using the advanced structural equation modeling (SEM) approach, considering the direct relationships between social acceptance or the successful application of AI technologies and their influencing factors, the research results showed that:

The impact coefficient of the organizational will variable in the relationship between organizational will and social acceptance or the successful application of AI technologies was 0.304 and positive, indicating a direct relationship between the two, meaning that organizational will has a positive effect. The corresponding Student's t-statistic for this relationship was 3.865, greater than 1.960, with a significance level approaching zero. Therefore, at the 95% significance level, the direct impact of organizational will on social acceptance or the successful application of AI technologies cannot be rejected. The estimated determination coefficient was 0.569, indicating that 56.9% of the changes in social acceptance or the successful application of AI technologies were influenced by organizational will.

The impact coefficient of the senior management inclination variable in the relationship between senior management inclination and social acceptance or the successful application of AI technologies was 0.247 and positive, indicating a direct relationship between the two, meaning that senior management inclination has a positive effect. The corresponding Student's t-statistic for this relationship was 4.018, greater than 1.960, with a significance level approaching zero. Therefore, at the 95% significance level, the direct impact of senior management inclination on social acceptance or the successful application of AI technologies cannot be rejected. The estimated determination coefficient was 0.408, indicating that 40.8% of the changes in social acceptance or the successful application of AI technologies were influenced by senior management inclination.

The impact coefficient of the compatibility and adaptability variable in the relationship between compatibility and adaptability and social acceptance or the successful application of AI technologies was 0.209 and positive, indicating a direct relationship between the two, meaning that compatibility and adaptability have a positive effect. The corresponding Student's t-statistic for this relationship was 3.968, greater than 1.960, with a significance level approaching zero. Therefore, at the 95% significance level, the direct impact of compatibility and adaptability on social acceptance or the successful application of AI technologies cannot be rejected. The estimated determination coefficient was 0.446, indicating that 44.6% of the changes in social acceptance or the successful application of AI technologies were influenced by compatibility and adaptability.

The impact coefficient of the government support variable in the relationship between government support and social acceptance or the successful application of AI technologies was 0.238 and positive, indicating a direct relationship between the two, meaning that government support has a positive effect. The corresponding Student's t-statistic for this relationship was 3.406, greater than 1.960, with a significance level approaching zero. Therefore, at the 95% significance level, the direct impact of government support on social acceptance or the successful application of AI technologies cannot be rejected. The estimated

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determination coefficient was 0.519, indicating that 51.9% of the changes in social acceptance or the successful application of AI technologies were influenced by government support.

The impact coefficient of the relative advantage variable in the relationship between relative advantage and social acceptance or the successful application of AI technologies was 0.254 and positive, indicating a direct relationship between the two, meaning that relative advantage has a positive effect. The corresponding Student's t-statistic for this relationship was 4.002, greater than 1.960, with a significance level approaching zero. Therefore, at the 95% significance level, the direct impact of relative advantage on social acceptance or the successful application of AI technologies cannot be rejected. The estimated determination coefficient was 0.638, indicating that 63.8% of the changes in social acceptance or the successful application of AI technologies were influenced by relative advantage.

The impact coefficient of the expected advantages variable in the relationship between expected advantages and social acceptance or the successful application of AI technologies was 0.325 and positive, indicating a direct relationship between the two, meaning that expected advantages have a positive effect. The corresponding Student's t-statistic for this relationship was 3.025, greater than 1.960, with a significance level approaching zero. Therefore, at the 95% significance level, the direct impact of expected advantages on social acceptance or the successful application of AI technologies cannot be rejected. The estimated determination coefficient was 0.429, indicating that 42.9% of the changes in social acceptance or the successful application of AI technologies were influenced by expected advantages.

The utilization of modern information processing technologies such as AI is considered an important and effective tool for improving sports event management (Keiper et al., 2023). For success and achieving excellence in sports event management, parallel with the continuous and complex changes in the world, which include a revolution in sports technology, sports organization managers must continuously update and maintain their knowledge and skills. Effective management and organization of an event, especially large national or global sports events, require a significant range of skills. Today, with the increasing complexity of the environment, intense competition, and higher levels of awareness, expectations, and demands, sports organization managers cannot continue their work effectively without up-to-date information and knowledge. The rapid development of tools based on these technologies and their rapid adaptation to human needs has created a new form of environment and active, creative interaction (Nalbant & Aydın, 2022). Timely access to information has prepared new sports event management systems for change, using new methods instead of repetitive old ones in conducting events (Mu, 2022).

The social acceptance of AI is a long process that not only involves the provision of software and technology but also the creation of necessary infrastructure and resources over time. However, there is still no empirical estimate of the social acceptance of AI. Consequently, this study aims to examine the aspects that influence the inclination or motivation to use AI on social acceptance, as well as the specific organizational competence and suitable organizational environmental conditions required for readiness to implement AI (Fister et al., 2015).

Reviewing studies on the social acceptance of AI, technological, organizational, and environmental frameworks provide an excellent starting point for examining AI acceptance. The usefulness of the stated frameworks is not only because they emphasize the unique context in which the process of social acceptance of AI utilization occurs, but also because they can be used as frameworks for further research.

Authors' Contributions

F.H., M.H., and S.N.S. contributed to the conceptualization and design of the study. F.H. led the data collection process, including the Delphi survey and the questionnaire survey with stakeholders and responsible parties. M.H. focused on the analysis and interpretation of the data using fuzzy logic and multi-criteria quantitative approaches. S.N.S. played a key role in identifying and refining the essential factors of social acceptance of AI in sports event management. All authors participated in the importance weighting and data refinement process. F.H. drafted the initial manuscript, and M.H. and S.N.S. provided critical revisions. All authors contributed to the development of the sports event management model with an AI approach, reviewed, and approved the final manuscript.

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Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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