

## **Investigating the Safety Status of the Environment based on the Elmeri Index and its Relationship with Sports Tourism in Iran's Stadiums (Study Case: Tehran Enghelab Sport Complex)**

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### **Abstract**

The purpose of the current research was to investigate the safety of the environment based on the Elmeri index and its relationship with sports tourism in Iran's stadiums. Method: It was conducted in a mixed quantitative and qualitative manner using the safety checklist of the environment according to the elmeri method and the researcher-made questionnaire of safety and sports tourism. In Al-Mari method, the checklist was made by the researcher and HSE specialist in Tehran's Enghelab sports complex. Also, the researcher-made questionnaire, which had valid validity and reliability, was distributed and collected by 100 sports tourists who were selected by Morgan's table as a simple random sample of 80 people. The results of the elmeri index regarding environmental safety showed that the component of safety behaviors with 93.5%, the component of cleanliness and order with 89%, the paths of passage with 87% and the component of fire and first aid with 75% have status were desirable Also, the opinion of tourists regarding the safety components of the environment showed that the component of first aid with the route coefficient of 63% and the t value (4.775) had the greatest impact in attracting tourism to sports venues. Also, the components of order and safety behaviors, according to tourists, did not have much effect on attracting tourism,  $P < 0.05$ . Conclusion: The safety condition of the Tehran Revolution sports complex was in a favorable condition, therefore it provides a suitable platform for holding sports events and holding international seminars and conferences in order to attract sports tourism.

**Keywords:** Elmeri method; Safety of sports facilities; Sports tourism.

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## **1. Introduction**

Safety (regarding unexpected and unplanned risks and threats) and destination security are among the most important issues that tourists pay attention to when making decisions for their trip; Especially when the purpose of the trip is to visit unfamiliar places abroad (Filliri et al., 2021). Tourism safety and tourism risks are always two intertwined topics in research; In some cases, the issue of tourism safety has been examined around safety risks (Xi et al., 2021). Unlike the issue of tourism risks (risks), which are related to issues such as terrorism, war and political instability, crime, natural disasters, or health risks such as Sars disease (Polizescu et al., 2018); In tourism safety, what is important and important is the existence of stable and orderly conditions. In other words, tourism safety refers to safe and free conditions for tourists during the time they travel. Considering that the safety of sports tourism destinations and the emotions that tourists experience during their stay at the destination have an impact on the expansion of more tourisms, therefore, people's emotional experiences regarding the safety and security of the environment can play a major role in deciding to return to the tourist. sports in tourism destinations (Emkono et al., 2017).

Sports facilities are the platform for the implementation of sports activities and programs, and their correct and principled design and management directly affects the quantity and quality of sports programs and events and the attraction of sports tourism, and since sports facilities and spaces are part of national capitals. In every country, increasing their useful life and increasing their efficiency increases the return on capital. In big sports events, a large number of visitors, athletes, spectators, media, and tourists come to watch, for this reason, sports competitions have significant positive effects on the economy and cause the development of the host society (Nemati et al., 2022). Considering the holding of sports events in safe places, these events can be known as an example of a suitable safety level in the society (Mousavi et al., 2021). The safety of sports facilities is very

effective in promoting sports activities. One of the important areas in safety is the review and control of equipment and the use of preventive measures to avoid accidents (Raisi et al., 2021). Since Iran has a very large geographical area and as a result different weather and climates, there is a need to design multi-purpose sports complexes according to different weather and climate conditions in order to increase the strength, security, stability and save energy consumption. Also, Iran is one of the accidents. It is considered the most vulnerable and most vulnerable countries in the world, so this issue has been taken into consideration in urban plans and programs (Daneshyar et al., 2023). Comprehensive urban plans include specific criteria for locating uses and retrofitting buildings, which can be used for any city and should be considered for sports venues as well (Radfar et al., 2019; Daneshyar et al., 2022). In the research of Hosseinpour et al. (2017) who investigated the safety indicators in sports environments, it was found that professional and committed management as the central category of safety culture, competence and specialized competence, legal and ethical requirements (ethical duty and law-abiding ) safety instructions, compliance with health principles, positive environmental approach, physical, mental state and personal equipment, human factors engineering, space, places and standard equipment, medical measures and emergency services, information and communication technology were determined as other safety categories in sports environments based on this model. And improving the role of different categories in the safety of sports environments to prevent accidents can improve safety in sports and prevent accidents in sports. Also, in the research of Araslan et al. (2023), which examines the security and safety measures of stadiums from the audience's point of view, it was found that the highest score is related to the sub-dimension "perception of violence prevention by security forces" and the lowest score is related to the sub-dimension "perception of control in is the entrance to the stadium. To the audience's perception of the security of the stadium. Especially women spectators consider the security measures in the stadiums to be sufficient, but think that the security forces cannot handle every

violent event that may occur. In addition, it is observed that participants who have a high level of education and define themselves as "very good spectators" have a higher understanding of security measures in stadiums. Also, safe equipment and standard environmental partitioning were very important in preventing accidents for spectators. Praznik et al. (2020) also considered the most important safety factors in holding international sports events to be firefighting equipment and infrastructure, the strength of spectators' stands, the amount of reconstruction of high-traffic environments, and the security of spectator traffic routes. Nowadays, compliance with safety considerations in sports spaces has become inevitable (Ebrahimi, 2016). Evidence shows that underestimation of safety is a widespread issue in workplaces. Therefore, to improve health and safety performance, it is essential to properly understand the factors of the activity environment (industrial, administrative, sports, service, etc.) Safety is one of the main aspects of performance in all service sectors such as sports, which, despite its high priority, has not yet been accepted and implemented by a comprehensive model for its evaluation, planning, implementation and monitoring within the country (Koze Chian, 2019). One of the most important tasks of environmental health is to take care of the health status of public places, which has a direct relationship with the health of the people in the society. According to the environmental health regulations, public places are places that belong to the general public, such as religious places, hotels, inns, nursing homes, schools and sports facilities (Gartlen, 2017).

Sports facilities in Iran are far from international standards. Therefore, one of the most important concerns of the managers of sports venues is to ensure the safety and health of spectators and participants in sports events in addition to preserving the environment and health and safety (Zafarian, 2018). The traditional view of sports in Iran has caused the creation of non-standard and dangerous obstacles and equipment, inappropriate and unsafe surfaces, non-compliance with playground fencing standards, the use of outdated tools and the

installation of improper ventilation systems. According to reports, all the factors mentioned have caused falls, sports injuries, loss of life and other irreparable damages. These consequences show insufficient attention to the safety of the environment (Zafarian, 2018). Basically, spaces and places that accommodate many people cannot be free of danger. If safety principles are not observed in these places, it may cause irreparable accidents and problems (Mozaffari, 2008). Therefore, it must be said that providing a safe environment for sports activities is essential and important. In order to provide a safe environment, the observance of safety principles in sports facilities and equipment should be taken into consideration. In general, the first aspect of observing the safety principles for equipment and equipment is to pay attention to the necessary standards in the design of the materials and equipment used and the general shape of the sports halls according to the number of users (Razavi and Dabaghian, 2015). Ernon et al. (2011) concluded that collisions with hard obstacles (such as boards, goalposts) and hard surfaces lead to severe injuries among hockey players. Gholami et al. (2012) low-quality sports equipment such as shoes and poor quality flooring in sports halls, Verhagen et al. (2010) inappropriate sports environment, non-standard tools and equipment, Petrido et al. Playing and using worn out and non-standard equipment are considered the most important causes of sports injuries. America (2012) based on research in which they evaluated 1024 playgrounds in 27 states showed that 80% of the fields lacked suitable surfaces. Having suitable floors is considered the most important safety factor. On the other hand, 75% of playground injuries are due to improper ground and falls. 27% of these 1037 playgrounds did not have suitable stands for spectators, and non-observance of safety points in the construction of spectators' stands was recognized as one of the most important factors in the injury of spectators. In 36% of the studied playgrounds, the distance of the walls and fences around the playgrounds were very close to the playground and their standard distance was not observed, which caused severe injuries and even death of athletes. Also, in the research of Abdulla et al. (2024), who examined safety and health indicators: a case study of the tourism

industry. In the results, they stated that in the tourism industry, it is necessary to prioritize health and safety measures to ensure the satisfaction and well-being of local communities and tourists. This study analyzed the publication patterns, geographic distribution, cited articles, and thematic emphasis on safety and health research in the tourism industry and stated that the importance of safety and health measures in the tourism industry in China between 2021 and 2022 is one of the most important indicators. Sports tourism has been in this country.

## **2. Theoretical foundations**

Sports tourism is one of the types of tourism that has a long history and its importance and development is increasing day by day, and some countries earn a lot of income from this. Different types of this type of tourism are included in the types of normal and nature-oriented tourism and sports event tourism. The realization of tourism in its various forms requires a geographical space, which acts as the main core of tourism (Kim et al., 2021). Researchers have categorized sports tourism in different ways. Redmon (2010) classifies sports tourism into types of sports holidays, sports festivals, world championships and halls of fame. Tourism with the purpose of visiting sports events that take place in large sports complexes with several halls and grass fields is one of the types of tourism with the attraction of sports tourists, which has received more attention after the 2008 Athens Olympics, and different countries are trying to The competition to improve the quality of sports halls and equipment and complexes in terms of safety and innovation and the security of tourism are in competition (Zhu et al., 2024). ELMERI index is a reliable tool for monitoring safety and health in work environments (production, industry and service). This method was invented in Finland in 2000 (Jamshidi, 2017). This index shows the current level of safety in the work environment, which evaluates and reports the results based on observing all aspects of safety and health of the work environment as well as the safety behaviors of the personnel.

Observations that are considered in the ELMERI index are: safe behaviors, cleanliness, orderliness, equipment safety, environmental health, ergonomics, passageways, fire safety and first aid. It is worth noting that the safety index is calculated as a percentage and its value varies from 0 to 100 percent. This index, while providing awareness of the level of compliance with the safety of the work environment, also determines and identifies the necessary measures to improve the safety status of each space (Zaykina, 2017). Today, accidents that occur in work environments are considered the major risks that can endanger the health of personnel and users. During the last decades, specialists and experts have tried to reduce the number of accidents by using different methods. The first way in this step is to improve the hardware condition (machines, equipment and safer devices) (Kazemi et al., 2017). In the next step, choosing the right people, training, establishing reward and punishment systems and paying attention to the management system, especially safety management systems. Each of these methods have been able to reduce the number of accidents, but they have not been completely successful. In the past, after the occurrence of accidents and irreparable damage, the causes of accidents were investigated and the defects of a system or process were determined. But today, the trend is towards preventing risk by using preventive measures (Qurbani, 2021). Safety performance measurement provides information that indicates the status of safety activities. Comparison between performance measurements and organizational patterns or goals allows the safety manager to make decisions and take appropriate action. The key difference between performance measurement and safety indicators is that performance measurement evaluates a safety process and safety indicators are measurement standards (such as the number of incidents). A set of safety indicators lead to safety performance measurement. One of the main benefits of performance measurement is that it enables companies to express the results of a safety process qualitatively, not quantitatively, and to analyze the results to determine the effectiveness of safety and health processes. (Lindry, 2001), these measurements enable the identification of problems and their prioritization. Also,

they identify the useful actions taken and make it possible to prioritize the macro issues of the company (Janikak et al., 2017). Therefore, in this research, the researcher is trying to investigate the safety indicators of the environment based on the al-Mari method and its impact with the development of sports tourism in Iran's stadiums.

### **3. Research method**

The present study is descriptive and cross-sectional, which was conducted in the summer of 2014 in Tehran's Enghelab sports complex in order to evaluate the safety and health performance of the environment using the ELMERI questionnaire method. This research is done in a mixed quantitative and qualitative method. The statistical population of the research is made up of 100 sports tourists present in the Tehran Revolution sports complex, and 80 people were selected by simple random sampling using Cochran's formula. In the qualitative part, Elmeri method is used, and in the qualitative part, using the opinion of elites to design a researcher's questionnaire, effective indicators in the Elmeri method are used to respond to sports tourists. This questionnaire included 4 components (safe behaviors, cleanliness and order, traffic routes, first aid) and has 10 questions. The content and form validity of the questionnaire was confirmed by the professors of physical education and HSE, and also its reliability was obtained by Cronbach's alpha test as 0.87%, which was an acceptable value. The data were entered in Smart Pls3 structural equation software to implement the research model. In the quantitative part, it was done by Elmeri method by the researcher and a HSE specialist. In this research, first, work units were identified in the Revolution Sports Complex, which is managed by the Sports Facilities Development and Maintenance Company of the country, and at least 5 observations are made in each unit (in the ELMERI method, in order to obtain a creditable score, it is necessary to Make at least 5 observations at each station)



**Table 1.** Elmeri method of observed items in each work section

Original item	Sub-items and criteria
Safe behaviors	1- The worker uses the necessary personal protective equipment
Ergonomics	1- This work does not involve hazardous repetitive tasks or manual handling of heavy loads 2- Work station and tools and equipment have ergonomic design.
Machine safety	1- Machines are in safe operating conditions, safety devices comply with safety standards. 2- Machine control devices comply with safety standards
Traffic routes	1- Traffic routes are solid, marked and non-slippery. Traffic lanes for pedestrians and vehicles are separated if necessary. The fall protection guard meets safety standards. 2-Emergency exits and exit signs comply with safety standards

(Laitinen et al., 2013)

### 3.1. Calculation of ELMERI index

The number of observations required to evaluate each of the seven items of the ELMERI index and the criteria for scoring the observations of each item are explained in the following section.

1. Identification of a number of jobs in the Revolution sports complex by field visit to the place
2. Selection of rooms and work spaces
3. Evaluation and inspection by the researcher based on ELMERI criteria
4. Calculation of ELMERI index

$$\frac{\text{correct observations}}{\text{correct observations} + \text{incorrect observations}} \times 100$$

The observed items are listed and how to rate them:

1-Safety behavior

Number of inspections

An inspection should be carried out for each worker in the workplace.

If the worker is not at work, the sign "not inspected" is marked.

Criteria for giving a "correct" score:

The use of personal protective clothing (PPE) and the elimination of hazards by the worker's use of (PPE) to the extent that it is necessary for his job and not accepting significant hazards.

Personal protective equipment (PPE) that may be required includes, for example:

- Head protection
- Leg and leg protection
- Hearing protection
- Eye and face protection
- Protective gloves
- Protective equipment to prevent falling from a height / safety belt
- Respiratory protection equipment

Risk acceptance, for example, may include:

- Use of defective equipment.
- Removing safety systems and disabling them.
- Servicing the working equipment.
- Launching and using devices with inappropriate speed.
- Smoking in prohibited areas.

2- Order and cleanliness

Number of inspections

A total of 5 inspections are conducted, one of which is for the following.

If there is no desk, shelf, machine surfaces, or trash container, the item is scored as "not inspected". If someone wants to emphasize order and cleanliness, the inspection can be done separately for each desk, shelf, surfaces and garbage containers, in which case we will have more than 5 inspections.

Criteria for a "correct" score:

- Desks: the desks are tidy and there are no unnecessary objects on it.

- Shelves: The shelves are neat and strong, or they are not too full and piled up.
- Surfaces of cars and closets, etc.: Don't place unnecessary objects on the edges of cars and closets.
- Garbage containers: Garbage containers should not be too full or overflowing.
- Platforms and floors: platforms and floors are clean and in good condition for walking, driving and transporting materials.

### 3- Safety of cars

#### Number of inspections

Inspection for each machine must be done at the workplace and separately. If a machine does not have protection or permanent means are not accessible, it should be given the score "not inspected".

Criteria for a "correct" score:

When the structure and conditions are "correct" that:

- The machine must be firmly established and have the necessary stability.
- Do not see any sharp edges that could injure you.
- The car should not be damaged and its structure should not be broken or damaged, no repair equipment such as adhesive tape should be seen on it at the beginning of the work.

Safety warning signs should be well visible.

#### Control devices and emergency cut-off switches

Control devices including the devices for turning on the car, turning it off and regulators in place:

- Visible, recognizable and appropriately marked.
- The replacement should be correct in terms of ergonomics and safety.
- The design of control movements should be integrated.
- The emergency shutdown control must also be clearly visible and can be quickly controlled.

#### Permanent means of access

Hole manholes should be equipped with permanent devices so that they can enter the areas used for daily production, adjustments and maintenance operations of the machine.

Permanent access devices are "correct" when:

- Be safe and have enough space.
- Paths with a slope of less than 45 degrees lead to a platform.
- Do not have anything unnecessary on it.

Finally, after review and evaluation by Elmeri indicators, the level of safety of the Tehran Revolution sports complex is determined in the findings section.

#### **4. Findings**



**Figure 1.** GIS map of the study area (Englab Sports Complex, Tehran)

**Table 2.** Calculation of the Elmeri index in the observation of safe behaviors in the Revolution sports complex

number	Safe behaviors	
76	correct	$\frac{\text{correct observations}}{\text{correct observations} + \text{incorrect observations}} \times 100$
5	incorrect	
7	Not seen	
93.5%	plural	

76 of the observations were correct, 5 were incorrectly observed, and 7 were not observed; It means that the use of personal protective equipment (protective equipment in combat sports by athletes, safety

clothing by complex workers, non-smoking in prohibited places) is in good condition.

**Table 3.** Calculation of the elmeri index in the observations of cleanliness, order and order in the sports complex of the Revolution

The level of halls and platforms	Garbage containers	Machine surfaces	Shelves	Work desks	Cleanliness and order	
43	257	36	56	78	correct	
11	19	1	3	9	incorrect	$\frac{\text{correct observations}}{\text{correct observations} + \text{incorrect}} \times 100$
1	5	1	4	5	Not seen	
74.5 %	93.5 %	94 %	94.6 %	88.5 %	plural	

In the component of cleanliness, order and arrangement of work tables index, 78 of the observations were made correctly, 9 were incorrectly observed, and 5 were not observed; That is, 88.5% of the desks in the Revolution complex are in good condition. 56 cases of the shelves index were observed correctly, 3 cases were observed incorrectly, and 4 cases were not observed; That is, 94.6% of office shelves and halls are in a good condition, order and cleanliness, structure and strength, and excessive placement of the equipment in the Revolution complex. 36 cases of machine level index were correct, 1 case was incorrect, and 0 cases were not observed; It means that 94% of the surfaces of the machines, i.e. the placement of unnecessary items on the machines and cabinets and closets in the Revolution complex, are in good condition. 257 cases of garbage containers were observed correctly, 19 cases were observed incorrectly, and 5 cases were not observed; That is, 93.5% of the waste containers have a good physical condition and are in a good condition in terms of hygiene. The level index of halls and platforms has been observed in 43 cases correctly, 11 cases

have been observed incorrectly, and 1 case has not been observed; It means that 74.5% of the surface of the platforms and halls, that is, the passage of people and the order and cleanliness of the platforms and floors in the Revolution Complex, are in a good condition

**Table 4.** Calculation of the Elmeri index in the observations of the passageways in the Revolution sports complex

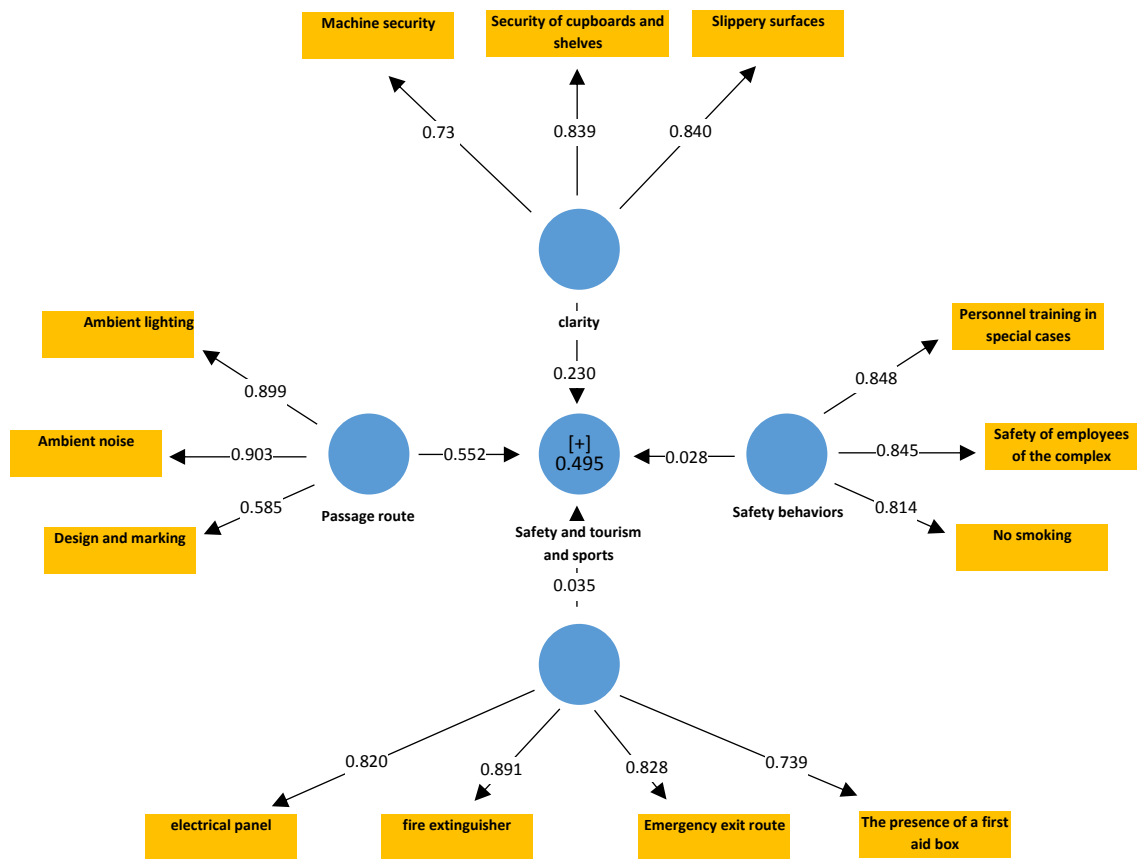
Brightness and visibility	order	Design and marking	Traffic routes	
80	75	81	correct	
5	12	21	incorrect	$\frac{\text{correct observations}}{\text{correct observations} + \text{incorrect observations}} \times 100$
0	0	0	Not seen	
94	74	74	plural	

In the design and marking design index component, 81 of the observations were made correctly, 21 were incorrectly observed, and 0 were not observed; That is, 74% of the markings of the traffic routes inside the sports complex are in good condition. The order index of 75 of the observations was correct, 12 were incorrectly observed, and 0 were not observed; That is, 74% of the markings of the passageways are in a good condition, meaning the absence of unnecessary objects in the passageways and the smoothness and non-slippery of the paths inside the sports complex. The brightness and visibility index of 80 of the observations were correct, 5 were incorrectly observed, and 0 were not observed; It means that 94% of the passageways with sufficient and uniform visibility and lighting inside the sports complex are in good condition.

**Table 5.** Elmeri index calculation in fire safety observations and first aid in the Revolution sports complex

Electrical panel	Emergency exit routes	Fire extinguisher	First aid box	Fire safety and first aid	
121	42	55	76	correct	$\frac{\text{correct observations}}{\text{correct observations} + \text{incorrect observations}} \times 100$
36	11	20	14	incorrect	
4	0	1	5	Not seen	
70	74.5	64	81.5	plural	

In the fire safety and first aid component of the first aid box index, 76 of the observations were made correctly, 14 were incorrectly observed, and 5 were not observed; That is, 81.5% of the equipment in first aid and the relationship between the equipment and the risks and nature of the work are in good condition. The fire extinguishing index of 55 of the observations was correct, 20 were incorrectly observed, and 1 was not observed; It means that 64% of fire extinguishers and easy access to them are not in a good condition. 42 of the observed emergency exit routes index were correct, 11 were incorrectly observed, and 0 were not observed; That is, 74.5% of the emergency exit routes are free of any obstacles and the clearly marked route that can be seen even in the event of a power outage and lighting system failure is in a good condition. 121 of the observations made on the electrical panel index were correct, 36 were incorrectly observed, and 4 were not observed; It means that 70% of the danger sign is installed on the electrical panels and there is at least 0.8 meters of free space in front of it, it is in a relatively good condition.



**Chart 1.** Path coefficient of safety components in sports tourism



**Table 6.** Path coefficient and t value of safety components and indicators in sports tourism

Effect of components	Path coefficient	number	T	Significant level	result
First aid	0.636%	80	4.755 %	0.05 > p	confirmation
Crossing route	0.552%	80	3.840 %	0.05 > p	confirmation
order	0.230%	80	1.386 %	0.05 < p	confirmation
Safety behaviors	0.028%	80	1.209 %	0.05 < p	confirmation

The results of Table 6 show that, from the point of view of sports tourists, the first aid component with a path coefficient of 63% and a t value (4.775) had the greatest impact in attracting tourism to sports venues. Also, the components of order and safety behaviors, according to tourists, did not have much effect on attracting tourism,  $P < 0.05$ . Also, regarding the indicators of each component, in the component of safety behaviors, the index of "personnel training in emergency situations" had the greatest impact with 84% correlation. In the first aid component, the fire extinguisher index had the greatest impact with 89% correlation. In the component of order and order, the index of slippery surfaces with 84% correlation, and in the component of traffic routes, the index of ambient noise and lighting with 90% correlation had the most impact on the mentioned components.

### 5. Discussion and conclusion

In this study, the state of security and safety of the environment was investigated based on the al-Mari index and its relationship with sports

tourism in the Tehran Revolution sports complex. The results of the environmental safety of the Tehran Revolution sports complex to attract sports tourists and hold important sports events were as follows: the component of safe behaviors with indicators of personal protective equipment, workers' safety clothing and non-smoking by workers was in a favorable condition with 93.5% had. In the component of cleanliness, order and order, the indicators of shelves, surfaces of machines, surfaces of halls and desks were in good condition with 89%. Regarding the component of passageways, which includes proper lighting and marking design, it was in a good condition with 87%. However, in the fire and first aid component, the fire extinguisher indicators and the emergency exit route with low coefficients of 60% were in a relatively good condition, which requires revision and correction in this regard by the complex managers. Also, from the point of view of sports tourists, first aid had the greatest effect in attracting sports tourists. Therefore, the research results are consistent with the following studies: Ali Beigi et al. (2018) researched the views of mountaineer sports tourists from the residents of Ilam city in the direction of tourism planning with an emphasis on the safety of tourists. The results of the research hypothesis test show that, in general, the level of insecurity in the Gachan region for tourists is higher than average, which can have a negative effect on the attraction of sports tourism in mountaineering. The results of the research hypothesis test show that, in general, the level of "insecurity" in Gachan region for tourists is higher than average. Kowal (2019) in the research analyzing the impact of environmental factors on tourism development concluded that the correlation coefficient between environmental safety indicators and the presence of tourists had coefficients above 70%, also there is a positive and significant relationship between crowding during sports matches and the reduction of tourists' security. There was, which shows the problems of crowd control by the authorities and the lack of fit of the sports environment with the tourist population. Also, Taheri et al. (2021) in the study of the role of the sense of security in the renewal of the sports tourism industry; A cultural approach of the Foundation

reached the conclusion that security after holding, before holding and during the holding of the competition with beta coefficient values of 0.382, 0.312 and 0.248 respectively in this sports event has the greatest effect on the return of tourists. were athletic ( $p < 0.05$ ). Also, Sobhani et al. (2021) in the research of compiling Iran's sports tourism security management model with the foundation data theory approach reached the conclusion that a total of 146 primary codes were created; Then, all the similar codes were placed in their own group and reduced to 19 subcategories, and finally, based on the secondary open codes, 7 main categories were created, which include the promotion of sports tourism security management, human resource management, infrastructure, physical protection, and management plan development. Security, event hosting conditions and individual and organizational consequences. In the following and during the central and selective coding process, the identified categories were placed in the paradigm model and the relationships between them were determined; This paradigm model includes the central phenomenon, causal conditions, contextual conditions, intervening conditions, strategies and consequences. In this way, the sports tourism security management model was developed. According to the findings of the research, it can be said that managers and operators in the field of sports tourism can increase the psychological security of sports tourists by focusing on the development of human resources management factors, formulating a security management plan, physical protection, infrastructure, and improving the conditions of hosting events. exercise In the research of Eszabolek et al. (2022), who investigated security and safety in the 2020 Summer Olympics, they concluded that it is the world's largest sports event, which is an important challenge for tourism professionals and law enforcement. Billions of people watch the Olympic events on television, and hundreds of thousands of people are at the venue at the same time. Ensuring the safety of tourists and athletes is the responsibility of the host country. In many cases, the target of terrorists is the tourism sector, which accounts for a significant share of annual income in some countries. Therefore, an attack can have significant economic

and social consequences. The study uses crime statistics and economic data to analyze and comment on each Olympic venue. As a result, there was a positive relationship between tourism and environmental safety with the mediating role of spending money to increase safety equipment and personnel. Also, in the research of Radnik et al. (2014), they stated that organized sports events, as a form of public gathering, face the challenge of the security of competitors and visitors to the sports event. Kabodani et al. (2021) in a study entitled "Comparison of the safety status and standards of archery sports venues in Tehran with international standards". In general, archery sports venues in Tehran are in a poor condition and are far from the standards of World Archery and GB Archery. In a research entitled "Evaluation of the health and safety status of educational and research laboratories of Shiraz University of Medical Sciences" based on the ELMERI approach, Malkoti Khah et al. The highest and lowest percentages (mean  $\pm$  standard deviation) were in the field of personal safety ( $89.12 \pm 46$  percent) and emergency response management ( $53.35 \pm 72$  percent), respectively. The subjects were evaluated in the good category.

According to the results, the overall safety of the laboratories of Shiraz University of Medical Sciences is at a good level. Emergency exit systems, formulation of instructions and training for emergency conditions, design of emergency exit doors and compliance with the requirements of emergency exit routes should be implemented according to the conditions of the laboratories. From the obtained results, it can be concluded that the average safety of the fields and sports facilities of the Tehran Revolution sports complex is in a favorable condition for sports tourism. The safety of sports environments is important because even the lowest level of safety indicators causes irreparable risks and damages for spectators and sports tourists. Negligence in the safety issues of sports venues can be a potential risk affecting efficient human resources and suitable sports environment, which the authorities should try to solve. In the Revolution sports complex, due to the high safety averages, there were

also weak indicators, which can be brought to the optimal level with a little attention and appreciation from the officials. One of the reasons for the low level of safety in sports venues can be said that usually threatening risks in the society have been less important, so the level of safety of large-scale sports venues such as the Tehran Revolution sports complex, among other things, requires the creation of a positive attitude in the field Health and promotion of safety culture should be one of the priorities of managers of sports facilities and at a higher level of planners and custodians of physical education. Therefore, the improvement of safety indicators in sports venues is also associated with the development of sports tourism. Sports tourism is one of the things that can improve the quality and quantity of sports venues by improving the economic situation and attracting sports investors. On the other hand, with the increase in demand for recreational opportunities in open spaces, Tehran's Enghelab sports complex can host international sports events with standard golf, tennis and football fields and compliance with safety principles in order to attract sports tourism and generate mutual income from It will improve the infrastructure and create suitable platforms for the development of sports facilities in the Revolution sports complex.

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