An Explanation of Safety of Football Stadiums and a Comparison between the Ninth and the Eleventh Football Champions Leagues

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Abstract: The aim of this study is to explain and compare safety condition of football stadiums during the ninth and the eleventh football Champions Leagues of Islamic Republic of Iran. This study enjoys applied goal, comparative-descriptive methodology and field data collection method. Study society as the sample size includes 13 stadiums all the hosts of Champions League in football of Iran during 2011-2012 season (the eleventh league). A researcher-made check-list according to standards of Asian Football Confederation is the study tool to assess four safety criteria of constructions and installations, standing of fans, health and standards condition and equipments and sporting accessories. Reliability of check-list is defined by “method of editors’ reliability” and “Pierson correlation coefficient” (r=0.93). Data was collected in stadiums, and descriptive statistics (mean, chart, frequency) were used to describe data. In order to consider the conformity of current data in various parameters to normal distribution, Kolmogorov Smirnov non-parametric test was used and at last, in order to compare obtained results with previous study in 2009, t-statistics method was used too. Findings showed that 1- safety of constructions and installations is in a good condition with 96% satisfaction, 2- safety of standing of fans is in an average condition with 47% satisfaction 3- health condition is average with 65% satisfaction 4- standards and safety of equipments and sporting accessories is in a very good condition with 96% satisfaction 5- totally, stadiums are in a good condition with 70% safety satisfaction. Fooladshahr Stadium in Isfahan had the highest safety with 84% satisfaction and Shahid Beheshti Stadium in Bushehr had the lowest safety with 59% satisfaction. There was also no significant difference between all four safety criteria for football stadiums in the ninth and the eleventh Champions Leagues statistically.

Key words: Safety, Football Stadium, Champions League of Iran

INTRODUCTION

Ever-increasing trend of sports during two last decades have changed them to an active industry in this century; so that, physical practices and sport sciences have faced great developments during the last years. In this regards, all territories of social science such as sociology, psychology and management along with physiological science of sport compete to discover hidden aspects, to offer solutions and to provide services for addressees. Death and defectiveness are going to be one of the most serious problems for public health. Although statistics are being raised in developed countries, but they have been able to control them by putting their entire scientific potential into operation. Authorities of Accident Control in developed countries believe that we will witness a 50% increase in the rate of death and defectiveness up to 2020 just due to use unsafe feasibilities. To prevent accidents especially in sport halls and spaces, secure and safe spaces and equipments with necessary instructions should be provided for users to avoid observation of more unpleasant accidents in society (Physical Education, 2008).

As a social symbol, sport and physical practice should be developed according to gradual changes and developments. Appropriate and developed feasibilities and substructures are the important aspects to promote quantitative and qualitative levels of sport activities. In our country, along with the increase of public interest to sport and physical practice especially among the youth and youngsters during recent years, the interest of investors including private and governmental entities has been increased to invest in various fields of sport (Physical Education, 2008). Sport halls and spaces are not separated, and billions of Rials are spent per year to establish new sport complexes or to equip old sport halls (Hassanzadeh, Mohammad Taghi. Jafari, Hossein. 2008). But it seems that the process of control and existence of suitable standards for sport halls and spaces are the less paid attention issues. In his PhD thesis entitled: “Obstacles and Strategies for Economical Development of Football Industry in Islamic Republic of Iran”, Elahi (2009) indicates that development of equipments and substructures is one of the main parameters for economical development of football industry, and expresses that non-observance of specific standards to construct and repair sport halls and football fields, not establishment of criteria (minimums) for spaces and halls required for Champions League of Football, and lack of continuous
assessments of sports’ clubs according to those criteria are some of obstacles against development of feasibilities and substructures of football industry of Iran.

Generally, a control process is required after any type of investment. Definition of appropriate standards or patterns is one of the most important stages of control process, because these standards are the bases to compare existing objects with desirable objects. In modern world, sport complexes are centers to hold most crowded human meetings and symposiums. Due to attendance of a great number of interested people in sport activities and excited presence of the old and the young, male and female athletes, coaches, referees, fans, journalists and at last, mass media in sport halls and places, modern and comprehensive principles and rules should be anticipated and applied to provide health and safety of events, plans and sport activities, the audiences and users (Elahi, A., 2009).

Elahi et al (2004) in their study entitled: “A Study of the Condition of Football Stadiums in Iran in Comparison with European Standards” considered the condition of football stadiums according to standards of EUFA. The findings of this study showed that 70.5 percent of football stadiums in Iran are too weak from viewpoint of appropriate feasibilities and equipments for fans, and only 5.8 percent enjoyed a good condition.

During recent decades, the great population of athletes interested in football has created a considerable capacity for a serious and higher presence of Iranian football in continental and ultra-continental arenas, although main substructures of this interesting and high-adherent sport are paid less attention, and as the consequent, standards of construction and equipment of stadiums are paid less attention too such as stadiums. Football stadiums are the substructure of this interesting sport. Regarding required standards in stadiums from various viewpoints such as safety, increase of quality of matches and attraction of more fans, taking hosting permission for international football matches is very important Elahi et al (2004).

Arthur et al (2009) in their study entitled: “World Cup 2010 Planning; An integration of Public Health and medical System” performed in order to offer some parts of public health planning to save the health of all participants in 2010 World Cup, concluded that the subject of development of public health quality and medical care has a great width and depth in 2010 World Cup.

Gurgaon (2011) in his study entitled: “Improvement of Safety of Canberra Stadium by means of Control Cameras” performed in order to consider general and financial safety improvement trend of this stadium, concluded that installation of these cameras generally decrease the rate of crimes and increase public security in this stadium. 25000 dollars have been saved in security costs during the events (22500 dollars were spent per year to employ security forces during the days of event) and 22000 to 40000 dollars have also been saved per year.

Regarding the need of Iran and its foreign policies based upon increasing sport spaces per capita, a major investment has been done by government and private sector in order to construct and develop sport spaces, but most of the sport spaces or under-construction complexes do not enjoy sport engineering standards due to lack of professional and researching resources. So, training, practicing and holding matches as main parts of sport activities are sabotaged, and investments have no optimized and qualitative achievement, because previous experiences and unfamiliarity of authorities with standard and modern security criteria and also unavailability of these criteria have appeared this defect (Elahi, A., 2009). Safety and health conditions of sport spaces are important subjects for experts of sport sciences, sport medicine and authorities. The term “safety is prior to work” should be regarded by sport teachers, coaches and authorities to plan sport activities. Nonstandard and dangerous obstacles and means and old and worn out equipments will cause physical injuries and even the death of athletes doubtlessly. During two last decades, Iranian sport society have had a relatively well growth from hardware and equipment viewpoints despite management problems, but it seems that required instructions for legal, security and civic obligations are not enough (Farsi, A. et al. 2007). Occurrence of unpleasant accidents such as the collapse of ShahidMottaghi Stadium of Sari manifests the necessity to regard standards in football stadiums especially for physical and safety qualifications. In 1989, 96 people were killed and hundreds were injured during conflicts between football fans in Hillsborough Stadium in Britain. Tylor, an inspector, was introduced as the head of research group for this accident. He considered the case and stemmed problems and concluded that weak condition of football stadiums is the main factor to create this accident. During the same year, seven important and applied recommendations were notified to football stadiums, most important of which are:

1- Reconsideration of safety of stadiums
2- Installation of single crossing system for fans
3- Provision of specific places inside stadiums for first aids (http://www.stadiumguide.com)

It should be mentioned that nonobservance of facility and safety criteria can create insecurity in stadiums. For example, football stadiums in Britain can be remembered which had very unpleasant conditions during some past decades, and this was an important reason to create insecurity in football stadiums of Britain. But after vast investigations and interference of the Government of Britain in construction of stadiums and also major improvement of stadiums, the condition of stadiums in this country was changed wholly, insofar as Britain has the best stadiums and football fans today (Bai, N., 2008). Considering current condition of stadiums
in Iran and comparing them with defined standards and desirable patterns can be a resource to present weaknesses and strengths of these stadiums, and can be used as a guideline for planners of sport spaces in various executive organizations, and also show the necessity of suitable programming for football stadiums in Iran. Football fields and stadiums are not exceptional and should enjoy standard safe conditions to be a safe and secure environment for numerous football fans. From time to time, we witness unpleasant accidents in Iran focusing on necessity of safety and security of stadiums. Followings are some examples:

In 1994 in Azadi Stadium, a bystander fell above stairs of western parking of Stadium due to lack of adequate visibility and died due to lack of emergency aids (Bai, N., 2008). In April 2001 during a match between two Pirouzi Football Team of Tehran and Shamshak Football Team of Noushahr due to not controlling the number of football fans, a part of stadium ceiling fell down and caused spinal cord injury on two people, killed two others and injured some more people too. Although newspapers of Iran wrote that two people had been killed, but official website of FIFA declared 18 killed people (Ashouri, R., 2009).

According to above-mentioned problems, how is the safety condition of Iranian stadiums to hold professional league matches, and how is the safety of these stadiums based on standards of AFC, and what changes have been done in stadiums of professional league of Iran compared to 2009?

2. Method:

According to the goal of this study to explain and compare safety conditions of football stadiums during the ninth and eleventh professional leagues of Iran, this study has an applied goal and descriptive-comparative method with sectional survey type.

Statistical Society and Sample:

Statistical society is equal with sample size including all 13 football stadiums which hold professional league matches during 2011-2012 season (the eleventh league) as it is described in table 1:

<table>
<thead>
<tr>
<th>No</th>
<th>Stadium</th>
<th>Location</th>
<th>Football Team(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Azadi</td>
<td>Tehran</td>
<td>Esteghlal, Pirouzi</td>
</tr>
<tr>
<td>2</td>
<td>Takhti</td>
<td>Abadan</td>
<td>San’atNaft</td>
</tr>
<tr>
<td>3</td>
<td>Yadegare Imam</td>
<td>Qom</td>
<td>Saba Qom</td>
</tr>
<tr>
<td>4</td>
<td>Shahid Bahonar</td>
<td>Kerman</td>
<td>Mes Kerman, MesSarcheshmeh</td>
</tr>
<tr>
<td>5</td>
<td>Hafezieh</td>
<td>Shiraz</td>
<td>FajrShahidSepasi Shiraz</td>
</tr>
<tr>
<td>6</td>
<td>Azodi</td>
<td>Rasht</td>
<td>Damash</td>
</tr>
<tr>
<td>7</td>
<td>Takhti</td>
<td>Bandar Anzali</td>
<td>Malayan Bandar Anzali</td>
</tr>
<tr>
<td>8</td>
<td>Fooladshahr</td>
<td>Fooladshahr</td>
<td>Sepahan, Zobahan Isfahan</td>
</tr>
<tr>
<td>9</td>
<td>Yadegare Imam</td>
<td>Tabriz</td>
<td>Tractor-sazi, Shahrdari Tabriz</td>
</tr>
<tr>
<td>10</td>
<td>Ghadir</td>
<td>Ahwaz</td>
<td>Foolad Khuzestan</td>
</tr>
<tr>
<td>11</td>
<td>Ekbatan</td>
<td>Tehran</td>
<td>Rah-Ahan, Naft</td>
</tr>
<tr>
<td>12</td>
<td>Enghelab</td>
<td>Karaj</td>
<td>SAIPA</td>
</tr>
<tr>
<td>13</td>
<td>ShahidBeheshti</td>
<td>Bushehr</td>
<td>ShahinBushehr</td>
</tr>
</tbody>
</table>

Method and Tools to Collect Study Information:

Field study was used to collect data and a researcher-made check-list was also used as the study tool. The tool is made by researcher by means of defined standards of AFC. This check-list considered four safety aspects of constructions and installations (75 statements), safety of fans standings (33 statements), health condition (14 statements) and standards and safety of sport equipments and instruments (53 statements). Resources of scientific information, websites, desk studies and e-texts were used to collect required information for this study. Checklists were completed by researcher and some other trained people. Variables focused in checklists were considered to extract results, and a statistical analysis was performed in framework of and according to the targets of this study.

Data was imported in SPSS 18 software after being extracted from checklists and being coded, and was analyzed by means of descriptive statistics. Descriptive statistics were used to offer and organize collected data as variables of frequency, mean, percentage and central parameters in the form of tables and charts. Tables and charts were drawn by EXCEL 2007 software. Five scales of very good (81-100% of safety), good (61-80% of safety), average (41-60% of safety), weak (21-40% of safety) and too weak (0-20% of safety) were used to report safety condition of safety indexes and total safety of football stadiums in professional league of Iran. T-statistics method was also used to compare the results of this study with the results of another study in 2009.

Results:

In this part, the parameters for safety condition of stadiums hosting professional league during 2011-2012 season of the eleventh league were considered including safety of constructions and installations, safety of football fans standing, health condition, standards and safety of equipments and sport accessories and at last, the sum of these four considered parameters (Table 2).
Table 2. Description of parameters of safety condition of stadiums hosting professional league in 2011-2012 season

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety of constructions and installations</td>
<td>13</td>
<td>0.6223</td>
<td>0.11526</td>
<td>Good</td>
</tr>
<tr>
<td>Safety of football fans standing</td>
<td>13</td>
<td>0.4754</td>
<td>0.1228</td>
<td>Average</td>
</tr>
<tr>
<td>Health condition</td>
<td>13</td>
<td>0.6523</td>
<td>0.6523</td>
<td>Good</td>
</tr>
<tr>
<td>Standards and safety of equipments and sport accessories</td>
<td>13</td>
<td>0.9677</td>
<td>0.9677</td>
<td>Very good</td>
</tr>
<tr>
<td>Sum of four parameters of safety</td>
<td>13</td>
<td>0.7015</td>
<td>0.07504</td>
<td>good</td>
</tr>
</tbody>
</table>

As it is seen in table 2, the average score for safety of stadiums hosting the ninth professional league for the sum of safety parameters is 0.7015 out of 1 point (about 70%) being in a good condition, and standard deviation is 0.07504.

Fig. 1: Safety percentage of football stadiums for the sum of four safety parameters

As it is seen in figure 1, stadiums of Fooladshahr Isfahan (84% safety, very good condition), Azadi Tehran (82% safety, very good condition) and Ghadir Ahwaz (77% safety, good condition) have the most safety and stadiums of Takhti Abadan and Takhti Bandar-Anzali (64% safety, good condition), Hafezieh Shiraz (62% safety, good condition) and ShahidBeheshtiBushehr (59% safety, average condition) have the least safety for four parameters of safety.

In this part, the findings of this study are compared with findings of the study of Hessami (2009) about the ninth professional football league to define if any changes is made in safety condition of stadiums of professional football league from eleventh league to ninth league or not? The results of the ninth league are represented in table 3.

Table 3: Description of parameters about safety condition of stadiums hosting professional football league in 2009-2010 season

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety of constructions and installations</td>
<td>16</td>
<td>0.65</td>
<td>0.15735</td>
<td>Good</td>
</tr>
<tr>
<td>Safety of football fans standing</td>
<td>16</td>
<td>0.4186</td>
<td>0.16716</td>
<td>Average</td>
</tr>
<tr>
<td>Health condition</td>
<td>16</td>
<td>0.4598</td>
<td>0.21184</td>
<td>Average</td>
</tr>
<tr>
<td>Sum of four parameters of safety</td>
<td>16</td>
<td>0.6707</td>
<td>0.10507</td>
<td>good</td>
</tr>
</tbody>
</table>

Kolmogorov Smirnov non-parametric test is used to consider that if data follows normal distribution or not. The results are represented in table 4.
Table 4: Results of Kolmogorov Smirnov non-parametric test to consider following of data of normal distribution

<table>
<thead>
<tr>
<th>Statistical parameter</th>
<th>Constructions and installations</th>
<th>Football fans standing</th>
<th>Health condition</th>
<th>Equipments and sport accessories</th>
<th>Sum of four safety parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Mean</td>
<td>47.79</td>
<td>14.65</td>
<td>7.62</td>
<td>49.72</td>
<td>119.79</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>10.369</td>
<td>4.886</td>
<td>2.769</td>
<td>1.849</td>
<td>16.194</td>
</tr>
<tr>
<td>Kolmogorov Smirnov non-parametric test</td>
<td>0.628</td>
<td>0.801</td>
<td>0.915</td>
<td>0.725</td>
<td>0.413</td>
</tr>
<tr>
<td>Sig. level</td>
<td>0.825</td>
<td>0.542</td>
<td>0.372</td>
<td>0.669</td>
<td>0.996</td>
</tr>
</tbody>
</table>

Whereas, the results of data analysis suggests that related data to parameters follow normal distribution, independent t-test is used to consider questions of study.

Research questions in deductive statistics:
1- How is the safety condition of constructions and installations of stadiums of professional football league of Iran in the eleventh league toward the ninth league?
2- How is the safety condition of football fans standing of stadiums of professional football league of Iran in the eleventh league toward the ninth league?
3- How is the health condition of stadiums of professional football league of Iran in the eleventh league toward the ninth league?
4- How is the condition of standards and safety of equipments and sport accessories of stadiums of professional football league of Iran in the eleventh league toward the ninth league?

Table 5: A comparison between four safety parameters of construction, fans standing, health condition and equipments of professional football league

<table>
<thead>
<tr>
<th></th>
<th>Lone test for equality of variances</th>
<th>Test for equality of means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F-value</td>
<td>Sig. level</td>
</tr>
</tbody>
</table>
| Safety of
constructions | Assuming equal variances | 2.211 | 0.149 | 0.529 | 27 | 0.601 | 0.028 |
|                   | Assuming unequal variances | 0.546 | 26.764 | 0.589 | 0.028 |
| Safety of fans
standing | Assuming equal variances | 2.375 | 0.135 | -1.021 | 27 | 0.316 | -0.057 |
|                   | Assuming unequal variances | -1.054 | 26.777 | 0.301 | -0.057 |
| Health condition  | Assuming equal variances | 3.789 | 0.062 | -2.946 | 27 | 0.007 | -0.192 |
|                   | Assuming unequal variances | -3.127 | 23.726 | 0.005 | -0.192 |
| Safety of
equipments and
sport accessories | Assuming equal variances | 0.176 | 0.678 | -7.143 | 27 | 0.000 | -0.055 |
|                   | Assuming unequal variances | -7.235 | 26.752 | 0.000 | -0.055 |

Regarding significance level in table 5 to test equality of means equal with 0.601 and 0.589 respectively and its comparison with allowable error rate 0.05 (p>0.05), Can say with 95% confidence, there is not a significant difference statistically between safety of constructions and fans standing in professional football league of Iran during the ninth and eleventh leagues. But for health condition and safety of equipments and sport accessories regarding significance level in above table for equality of means equal with 0.007 and 0.000 respectively and comparison with allowable error rate 0.05 (p>0.05), Can say with 95% confidence, there is a significant difference between health condition and safety of equipments and sport accessories in professional football league of Iran during the ninth and eleventh leagues. So, regarding mean values represented in table 5 and comparing them, it is obvious that the condition of health and safety of equipments and sport accessories of professional football league in the eleventh league is better than the ninth league.

5- The condition of four safety parameters of professional football league in the eleventh league toward the ninth league
remove all dangerous factors in area of physical practice and sport, but designers and planners should make consuming to do, but correct and logical anticipations may do it efficiently. Obviously, it is almost impossible to of complete safety of installations, equipments and sport accessories is very difficult, complicated and time-

managers have found it to be secure against the Lightning in the stadium with a plan of action suited. Provision signposts. Enough number of signposts should be used to accelerate entry and exit of spectators and direct them.

the safety of footballers, authorities, coaches and football fans. Unfortunately no entrance gate had enough constructions and installations of portal façade of stadiums have enough light as an important factor to increase

establish input and output gates (Elahi, A., 2009). In parameter of inputs and outputs, fortunately 100% of
every effort to minimize the level of dangers and damages on participants and spectators in their designs to
direct and clear view of all scenery of game. Projects must ensure that in any condition, fans can take their seats

Farsi

can prevent occurrence of many accidents

users. Regarding safety points to construct appropriate sport spaces, enjoying a time schedule to repair sport
corresponds to findings of Hessami (2009) but mismatched with findings of Elahi et al (2006). Hessami indicated safety parameter of

conditions and installation as 65% satisfying and Farsi concluded in his study that sport spaces of
governmental universities of Tehran have 67.7% safety in parameter of constructions and installations. These
findings did not match with findings of Rahimi et al (2002), Bai (2008), but the difference of sample sizes and the time to perform studies may be a reason of these mismatch.

One of the most important duties of managers and authorities of sport spaces is to create a safe place for
users. Regarding safety points to construct appropriate sport spaces, enjoying a time schedule to repair sport
complexes and employing expert managers to govern these spaces can prevent occurrence of many accidents
and injuries. Gratzev et al (2006) in their study titled “Stadium security against lightning and great stadium
managers have found it to be secure against the Lightning in the stadium with a plan of action suited. Provision of complete safety of installations, equipments and sport accessories is very difficult, complicated and time-consuming to do, but correct and logical anticipations may do it efficiently. Obviously, it is almost impossible to remove all dangerous factors in area of physical practice and sport, but designers and planners should make every effort to minimize the level of dangers and damages on participants and spectators in their designs to establish input and output gates (Elahi, A., 2009). In parameter of inputs and outputs, fortunately 100% of constructions and installations of portal façade of stadiums have enough light as an important factor to increase the safety of footballers, authorities, coaches and football fans. Unfortunately no entrance gate had enough signposts. Enough number of signposts should be used to accelerate entry and exit of spectators and direct them.

In parameter of facilities, no item was regarded as equipment of stadiums instead of two factors of water
cooling system and buffet which were in a good condition with 54% satisfaction. Stadiums have no facilities for
users (especially for disabled people) such as emergency phones, bathrooms and public phones; whereas, it is
said frequently that football fans are the main capitals of sport (Elahi, A., 2009). Facilities are one of the most important factors to attract football fans to stadiums. It is obvious that if the condition of stadiums improves, the interest of fans will be increased to attend stadiums day by day (Amirpur, M., 2009). This will have a positive impact.

Locker room is one of the initial facilities in stadiums for footballers and referees which is fortunately
regarded in all stadiums of professional football league of Iran, but other details such as suitable height of
clothes-hanger, locking cabinets, showcases and suitable floorings are regarded in only 62% of stadiums.

The management of stadium has responsibility to take any required measure to offer first aids to all people
who attend the stadium or work there. Required measures should be taken in order to fight with fire to protect all
users and workers (Farsi, A.R., 2006). Larry and colleagues study (2010) on “public health services in the Club -
English Football League” was performed, the results suggest that public health services are available at the club
was effectively used especially when they have limited access to public health care. However, definition of
areas of ambulances is regarded in all stadiums in parameter of medical and fire-fighting facilities for buildings
and installations. Expiry date of only 23% of fire extinguishers in all stadiums was valid.

According to information of this study, stadiums hosting the ninth professional league are in an average
condition with 48% safety satisfaction for parameter of safety of fans standing in the eleventh league. This
information conforms to findings of Hessami (2009) but mismatched with findings of Elahi et al (2004) and
Farsi et al (2006). Some factors such as different societies, different methodology and different times to perform
study may be some reasons of this mismatch. It is regarded in principles of stadiums that all fans should have a
direct and clear view of all scenery of game. Projects must ensure that in any condition, fans can take their seats

Regarding significance level for equality of means equal with 0.382 and comparison with allowable error rate 0.05 (p>0.05) Can say with 95% confidence, there is not a significant difference between four safety parameters in professional football league of Iran during the ninth and eleventh leagues.

Discussion:

According to information obtained from this study, stadiums hosting the eleventh professional football league of Iran are in a good condition with 62% safety in parameters of construction and installations. These findings conform to findings of Hessami (2009) and Farsi et al (2006). Hessami indicated safety parameter of

conditions and installation as 65% satisfying and Farsi concluded in his study that sport spaces of
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users and workers (Farsi, A.R., 2006). Larry and colleagues study (2010) on “public health services in the Club -
English Football League” was performed, the results suggest that public health services are available at the club
was effectively used especially when they have limited access to public health care. However, definition of
areas of ambulances is regarded in all stadiums in parameter of medical and fire-fighting facilities for buildings
and installations. Expiry date of only 23% of fire extinguishers in all stadiums was valid.

According to information of this study, stadiums hosting the ninth professional league are in an average
condition with 48% safety satisfaction for parameter of safety of fans standing in the eleventh league. This
information conforms to findings of Hessami (2009) but mismatched with findings of Elahi et al (2004) and
Farsi et al (2006). Some factors such as different societies, different methodology and different times to perform
study may be some reasons of this mismatch. It is regarded in principles of stadiums that all fans should have a
direct and clear view of all scenery of game. Projects must ensure that in any condition, fans can take their seats

Table 6: Descriptive statistics of the comparison between four parameters of safety in stadiums of professional football league

<table>
<thead>
<tr>
<th>League</th>
<th>Sample size</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard deviation from the mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ninth</td>
<td>16</td>
<td>0.6707</td>
<td>0.1051</td>
<td>0.0263</td>
</tr>
<tr>
<td>The eleventh</td>
<td>13</td>
<td>0.7015</td>
<td>0.0750</td>
<td>0.0208</td>
</tr>
</tbody>
</table>

Table 7: A comparison between four safety parameters of stadiums of professional football league

<table>
<thead>
<tr>
<th></th>
<th>Lone test for equality of means</th>
<th>Test for equality of means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F-value</td>
<td>Sig. level</td>
</tr>
<tr>
<td>Assuming equal variances</td>
<td>1.233</td>
<td>0.277</td>
</tr>
<tr>
<td>Assuming unequal variances</td>
<td>-0.920</td>
<td>0.366</td>
</tr>
</tbody>
</table>

Regarding significance level for equality of means equal with 0.382 and comparison with allowable error rate 0.05 (p>0.05) Can say with 95% confidence, there is not a significant difference between four safety parameters in professional football league of Iran during the ninth and eleventh leagues.
and have not watch the match in a boring state. Such this condition is not regarded in most of the old stadiums with retaining roofs, spotlight towers and inclined standings. According to findings of this study, all stadiums have fans standing although none of which are covered. 77% of stadiums had chairs as the seat of fans but not completely (for example Azadi Stadium as the main football stadium of Iran is equipped to chairs only in the first floor of fans standing). All seats are made of inappropriate and flammable materials as a dangerous factor. Only in 54% of stadiums the distance between fans standing and play ground is regarded because all studied stadiums are Olympic style stadiums. Olympic stadiums are the main grounds of Olympic Games and opening and closing ceremonies of Olympic, track and field champions and football final matches are being held there. So, extra spaces are required around football pitches and athletics track tart to be used for opening and closing ceremonies. So, Olympic stadiums are constructed on vast areas and the distance between fans standing and play ground is high. For example, in Azadi Stadium as the main football stadium of Iran, this distance is about 30 meters in some points (Amirpur, M., 2009). This causes an inappropriate view for fans. Unfortunately none of the stadiums in the eleventh professional football league are specific stadiums for football and all are made in Olympic style. In Iran, only ShohadayeNoushahr and Shohadaye Sari Stadiums are football specific stadiums (the most standard stadiums for football in Iran) (Dosti, M., 2008). Athletics track is not made between playground and fans standing and viewers have an appropriate view. In specific stadiums for football, no other sport is done (especially track and field which destroys the grass).

To decrease dangers caused by disorder and also continuous injuries, a correct and logical deduction is required to separate standings of fans of two teams. Such this requirement is more necessary for some of the football teams. Authorities and experts have concluded that gradual and continuous progress to separate fans of two teams should be one of the aims of stadiums due to over-backing of some fans (Farsi, A.R., 2006). Regarding findings of this study, fortunately 77% of stadiums in the eleventh professional football league have separated the fans of guest team from the fans of host team.

Among studied stadiums only 15% of stadiums have anticipated special seats for disabled people. This finding conforms to findings of Doosti (2008). In his studies, Doosti found that 96% of football stadiums in his sample size do not have special seats for disabled people although seats specific for disabled people are one of the important principles and rules to construct sport stadiums (Elahi, A., Z. Poraqayy, 2004).

Regarding findings of this study, none of the stadiums had numbered their seats. This finding conformed to findings of Doosti (2008) too. Without numbering seats, it is not possible to create a complete and comprehensive order among fans. Moreover, accurate numbering of seats lets security guards know who with what kind of characteristics has sat anywhere to take necessary measures if required. Experiences show that stadiums in which the seats are specified for fans, less injured fans are reported. Sitting of fans make them easy-to-control. In such cases, delinquent and irregular people are paid attention and are recognized soon (Farsi, A.R., 2006). In manuals of bathrooms, it is suggested to have qualified and separated bathroom for ladies, but according to findings of this study, only 23% of stadiums have enough water drinking systems and only 31% of them have buffet and food services. There are health, buffet and relaxation facilities for disabled people in 8% of stadiums, but there is no first aid facility in all stadiums for fans. The number of bathrooms in all stadiums is less than standard and only 8% of them have anticipated specific bathrooms for ladies, although new and appropriate facilities attract more fans to stadiums and creation of a safe environment for this active population attracts them to sport and physical practices (Rahimi, G, et al., 2009).

The obtained goals showed that stadiums hosting the eleventh professional football league in Iran are in a good condition from viewpoint of health with 65% point. These findings did not conform to findings of Hessami (2009) and Farsi et al (2006). Sport complexes are public places and very important from viewpoint of health because of too many people who attend them and communicate with each other. This importance is obvious more for infectious and contagious deceases; so, the stadiums require specific attention both while being constructed and being managed to prevent incidence of infections and to provide assurance for all users (for example women, children, elders and disabled people) and at last, to reach the main goals to take maximum optimized advantages (Elahi, A., 2009). According to findings of this study, only 38% of stadiums enjoy appropriate and enough bathrooms and 92% of them have suitable air conditioning at restrooms of footballers and referees.

According to information obtained from this study, stadiums hosting the eleventh professional football league of Iran are in a very good condition form viewpoint of standards and safety of equipments and sport accessories with 97% satisfaction. These findings conform to findings of Hessami (2009), Bai (2008), Sayyah et al (2005) and Finch et al (2000). Above researchers have obtained similar results in their studies and discuss about an appropriate condition for parameter of standards and safety of equipments and sport accessories. The findings of this study did not also conform to findings of Elahi et al (2004) and Zazarin et al (2001), but sample size, methodology and time to perform studies can be the factors of such this mismatch. According to findings of study, fortunately all stadiums had standard grass field and enjoyed suitable drainage system. The grass fields in all stadiums were according to standards of FIFA.
To eliminate unpleasant fences around most of the grass fields is maybe the most powerful sign of changes and developments in sport safety during the recent years. These fences have been worthless to use in some countries such as Britain and Scotland due to complete standardization of stadiums and improvement of population management methods and security mechanisms. This measure was taken during European Champions League in 1996. Then other European countries removed such these fences. Authorities of Football International Federation described this removal as an appropriate and ideal measure and declared that playing ground should not be surrounded by fences. Maybe such this action is explained as carelessness somewhere, but it should not be forgotten that when there is no fence between fans and playing ground, a kind of satisfaction is felt in the fans and they would believe disorder and irregularity as dishonor (Bai, N., 2008). Yet and as an important point in this regard, a study performed about the ninth league showed that there was a fence between fans and grass field, but fortunately in the eleventh league, all fences have been removed.

Analysis of results shows that the standard of equipments, playing instruments and safety of playing ground have been regarded in football stadiums and are in an appropriate condition. This is a considerable point in qualitative progress of predefined standards by AFC and FIFA.

The results showed that stadiums hosting the eleventh professional football league are in a good condition with 70% satisfaction for all four parameters of safety. Knowing these findings, it should be also paid attention that some other details such as seats, appropriate view, public relations systems, criteria to construct a stadium, strength of ceilings and requirements of disabled fans must be regarded while designing or repairing stadiums.

Unawareness of above points prevents authorities to emphasize on investment and to regard many safety issues, because it is supposed that while under-construction building takes the figure of a stadium, anything is over and the stadium is prepared for operation. This is incorrect. Most of the Iranian and even foreign stadiums require a great repairs on fans standings (Bai, N., 2008).

The results of this study showed that Fooladshahr Stadium in Isfahan (84% safety, very good condition) and Azadi Stadium in Tehran (82% safety, very good condition) enjoy the greatest level of safety conforming to findings of Hessami who studied the ninth league. Probably, financial condition of football clubs and their background to team in professional football league and Asian Champions League are important factors in higher safety of stadiums. So, it is obvious that Azadi Stadium in Tehran and Fooladshahr Stadium in Isfahan have a better condition in comparison with other stadiums.

The results of this study are compared with the results of Hessami (2009) and it was shown that there was no significant statistical difference between the ninth and the eleventh professional football leagues from viewpoint of safety parameters. Due to ever-increasing development of knowledge and technology, no wonder that there is no even statistical difference between two considered leagues during this 3-year gap. Prevention of above-mentioned accidents requires more attention of authorities and stadium managers to construction and fundamental installations. Of course, no noticeable progress has been made during this time distance, and it is required to take appropriate plans, employ skillful engineers and architects and regard international standards confirmed by AFC to improve the condition of public health of fans and importantly, to prevent reduction of quota clubs in Asian Champions League which is being discussed in fundamental aspects to standardize installation of stadiums.

REFERENCES


