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Research Paper

Identifying and Prioritizing Investment Risks in Sports Projects (Case study: Tourism industry)

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ABSTRACT

One of the biggest shortcomings of urban spaces in most cities of the country is the lack of suitable sports spaces, which in addition to improving the health of the general public, especially the youth, creates a lively environment and can boost the development of the tourism industry. Many projects in the country, especially sports, are slow or stopped due to not evaluating the relevant risks, so the purpose of this study is to identify and prioritize investment risks in the country's sports projects. The present study is positive research in terms of philosophical foundations and is applied in terms of orientation. The statistical population of the study includes experts in the field of sports tourism and the sampling method has been done judgmentally. To conduct the research, in the first stage, the risks of investing in sports projects were assessed through a literature review. The number of these risks was 15, and after screening with a Binominal test, 6 factors were excluded. The remaining 9 factors were evaluated in terms of the degree of impact of the Dematel technique and 5 factors, i.e. market risks, economic risks, legal risks, financing risks, and stakeholder conflict risks were selected as the most effective risks in terms of net effect index. Finally, these 5 risks were ranked by Ara's decision technique and it was observed that the economic, market, and financing risks, had the highest priority.

1 Introduction

With more than 1,186 million international tourists traveling worldwide in 2015, the tourism industry has become one of the largest world industries in recent years, generating a revenue of about $1,260 billion. According to the statistics provided in 2015, the share of the tourism industry in GDP has been estimated to be 10% and in the total global exports, its share amounted to 7%, while the employment rate created through this industry worldwide is estimated to be one out of every 11 jobs [34]. Sports tourism, as the third most common industry in the world to generate revenue and employment, is considered among the most important resources in any society to achieve economic, social, and cultural goals [30] and is the most popular activity related to leisure time. This industry has significantly grown in recent decades, and many countries in this field are engaged in research, planning, investment, and especially marketing, and thereby they have been able to develop tourism in

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their country and exploit its abundant benefits in economic areas [1]. The development of tourism and related projects requires investment and financing. Financing is the art and science of cash management. The purpose of financing is an investment, profitability, risk reduction, and satisfaction of the economic and social needs of a firm. The profits gained from a firm's business are considered important factors for the continuation of the firm's activity and are an important source for financing the firm's operating activities in the future. One of the concerns of economic firms in the world is to provide desirable financial resources. Every type of activity requires financial resources, hence, financial resources have been compared to the lifelines of small and large enterprises and organizations. In fact, the main objective of any economic activity is to provide profitability, and making a profit is not possible without financial resources [27].

Prior to any investment, the risks associated with it must be identified. The measurable potential loss of an investment or the possibility that the return on investment may differ from the expected return is called Risk. Risk is an integral part of any investment and is closely related to the return on investment; naturally, applying the analysis of its effects on the investment sector depends on a deep understanding of the nature of risk and transforming it from an abstract concept to a computational tool. Risk assessment in financial management is a central issue and it is very crucial to study this important phenomenon. Galtiz [14] considers risk as any fluctuation in any return. The mentioned definition clearly reveals that possible future changes in an index, either positive or negative, put investors at risk [22]. Therefore, these changes may benefit or harm them. However, Harry Markowitz was the first one to introduce a numerical index for risk based on quantitative definitions. He defined risk as the multivariate standard deviation of a variable. Of course, there are other perspectives on the risk that merely focus on the negative aspects of volatility. For example, Hube [18] defines risk as the possibility of declining income or losing capital, but in general, the risk of an asset is a possible change in the future return on that asset; therefore, the more volatile the future returns of an asset (investment), the higher the risk of that asset (investment). In this regard, Schottige et al consider risk as the possibility of the occurrence of a destructive phenomenon influencing the return on an investment that affects the return on investment with a certain and estimable weight. Furthermore, Shin [33] introduces risk as the probability that the return on investment is different from the expected return and emphasizes that individuals can estimate the amount of investment risk by estimating standard deviation or by calculating conditional probability values using the ARCH family of models.

2 Theoretical Foundations

Sports, as a major social phenomenon, play a key role in human life [19]. In fact, sport is a requirement of contemporary life and is considered part of the culture and identity of nations [7]. On the other hand, tourism, like sports, has become an important part of modern life [10]. The current trend in tourism over the past years has shown that sports tourism is now a significant part of the global tourism market, and according to its significant growth, the World Tourism Organization believes that sports tourism is now an emerging market [13]. Many countries consider this industry as the main source of income, job creation, private sector growth, and infrastructure development [11]. Tourism consists of various types, including historical, religious, industrial, energy, and sports tourism. Meanwhile, the link between tourism and sports has generated a kind of tourism that creates a new and comprehensive structure to fill leisure time with human mental and physical vitality [25]. In other words, sports and tourism have common goals: bridging the mutual understanding between different cultures, enhancing peace and friendship among nations, and encouraging people to engage in fun

activities in order to escape from the stresses of everyday life [8]. Thus, sports tourism is growing rapidly and has become a huge and independent industry, so its growth greatly increases every year, with the fastest growth rate being observed among various areas of tourism, and this sector has annually generated a revenue of about 1571 billion dollars [9]. Sports tourism has been defined as traveling for commercial and non-commercial purposes to observe or participate in various sports activities [16]. In general, sports tourism has three types and includes three main behaviors: participating (active sports tourism), watching (event or passive sports tourism), and visiting popular sports-related attractions such as visiting sports museums, important stadiums, and famous sports figures [23]. Sports tourism is one of the growing types of tourism that attracts a large number of tourists to sports competitions and events. Sports competitions that are held with the participation of various sports teams in all parts of the country are among the events that can attract the attention of tourists [17]. Due to the same reason, many countries with huge investments will absorb the effects and benefits of this type of tourism and use it as an important source to improve their economic, social and political situation, increase the employment rate and income, develop infrastructure and enhance their prestige and credibility [35].

Given its importance in people's health, the vitality and happiness of the youth, the attraction of tourists in sports festivals, and earning a large income in advertising, the field of sports needs investment in order to be able to grow. Research in this area indicates that the issue of investment and risks has been rarely considered. Most risk assessment research is related to industrial and service projects. Accordingly, the present study seeks to identify the investment risks of sports projects and provide a model in this area. One of the problems and challenges of most projects in all areas of Iran is the issue of investment and financing. An investment consists of any sacrifice of value in the present time (which is usually known) in the hope of gaining any value in the future, the quantity or quality of which is usually unknown. In other words, the investor sacrifices a certain value in order to achieve the desired value in the future [12]. Project risk is an uncertain event that when occurs, would have both positive and negative effects on one or more objectives, including cost, time, scope, and quality [15]. Project risk means an unpleasant event that may be caused by delays, additional costs, and unsatisfactory project outcomes for the organization, community, or environment [31]. Project risk is an uncertainty that, if it occurs, will have positive and negative effects on at least one of the project objectives such as cost, scope, quality, etc. [2]. Uncertainty risk is defined as the probability of a harmful event that takes place in a project and affects the project's goals. Risks do not always have negative consequences, but sometimes they also create opportunities [28]. A risk may have more than one cause and could also affect more than one dimension of the project [31]. The research related to sports tourism and investment risk is mentioned in the following. Initially, the research related to sports tourism is dealt with.

3 Literature Review

Karadkis [20] conducted a study to assess the strengths and weaknesses as well as opportunities and threats of a city for strategic planning of sports tourism. The researchers claim that this SWOT analysis can be used for future planning. In addition, planners can use these results to determine what opportunities or threats each weakness or strength leads to. Kellet et al [21] compared two cities, one of which had developed a strategic plan for the development of sports tourism, while the other city had made no effort in this regard. In this study, it was indicated that a city with strategic planning in this area was able to achieve new relationships as well as new cultural insights, and improved organizational networks, while the other city was unable to achieve any of these long-term benefits. Shahbazi

et al. [32] studied and ranked the role of mass media in the development of sports tourism in the city of Tabriz. The results showed that the mass media had the highest contribution to "human force training" with an average rank of 4.39 and the least contribution to "identification of environmental capacities and capabilities" with an average rank of 3.78. Moreover, among the mass media, television, the internet, and modern media had the highest contribution to the development of sports tourism in Tabriz. According to the research findings, it can be concluded that television, the Internet, and modern media have a major role in the development of sports tourism. Ahangari et al. [3] provided strategic planning for the development of sports tourism in West Azerbaijan province using multi-criteria decision-making techniques. The results suggested that the most important strength factor was favorable weather conditions; the most important weakness factor was the lack of dedicated financial resources, the most important opportunity was favorable natural conditions and topography and the most important threat was macroeconomic reliance on revenues other than sports tourism. It was also observed that weaknesses are relatively superior to strengths, and the threats posed by the external environment to the development of sports tourism outweighed the opportunities they create. Therefore, given the defensive development of sports tourism in the province, the presented strategies can be expanded in order to eliminate weaknesses and consequently develop sports tourism.

Rahimi et al [29] in their study proposed a model for the development of sports tourism in international sports events in Iran in the field of volleyball. The results of the research model demonstrate the greater importance of legal factors in the development of international sports tourism in Iran in the field of volleyball, with a statistic of $t = 6.8$. According to the obtained results, constructing and equipping volleyball-specific sports tourism centers and bases in different climatic regions of the country and efforts to pass laws in order to encourage and support domestic and foreign investors in volleyball sports tourism seem to be necessary. Numerous studies have been conducted in the field of project risk and investment, which are discussed in the following section. Baynal et al [6] carried out a study entitled “Risk management in automotive manufacturing process based on FMEA and grey relational analysis.” In this research, an integrated method combining grey relational analysis (GRA) with failure mode and effect analysis FMEA was applied. The purpose of this paper was to assist risk management practices by proposing solutions to assembly line problems in an automotive manufacturing company using a combination of grey relational analysis and FMEA methods. The results of this study revealed the actions that lead to production enhancement. Implementing preventive activities has resulted in a 96% improvement in the door seal cuts problem due to the doorstep assembly and the noisy door window problem was completely removed. Shin et al [8] have conducted a study entitled “Identification and prioritization of risk factors in R&D projects based on an R&D process model.” In this study, researchers have stated that although the need for risk management and failure management for sustainable development is emphasized in many organizations, most studies have dealt more with production or service processes rather than R&D processes. Since R&D projects have high uncertainty in the schedule and quality of output, it is important to pay more attention to managing the risks of R&D activities.

Therefore, this study proposes a systematic approach to performing R&D failure and risk management in the R&D process. To meet this purpose, the failure mode and effect analysis method were used and modified to meet specific features of R&D activities with a stage-gate model that can identify failure modes in each stage of the R&D model. In addition, this process has been proposed to prioritize the risks of R&D failure to support a decision-making process in R&D management called DEMATEL (Test and Decision Evaluation Method). The proposed approach was used in a case study

during the research and development of a software development company that was applied to demonstrate its validity. This paper was able to help research and development managers systematically to identify and cope with risks in the R&D process. Wang and Yang [36] conducted a study called "Flexibility planning for managing R&D projects under risk." Researchers in this study have stated that managerial flexibility in planning R&D projects is essential because it reduces business and technical risks and potentially increases market value. This study aimed at developing a flexible approach to planning based on real options analysis to improve managerial flexibility for R&D projects. The proposed method in this research has identified potential risks that may occur during any of the R&D stages. This approach introduces a cascading option structure to address identified risks and selects and evaluates appropriate options to minimize the potential value of the project. Instead of using the traditional option pricing method, a dynamic programming model that takes multidimensional product performance and market payoff into account to evaluate the value of an R&D project was applied. Using the proposed method, managers would be able to identify future scenarios as a function of their actions. This flexibility planning method can help managers improve the management flexibility of R&D projects and enhance the success rate of product launches. Mu et al [26] published a paper entitled "Effect of risk management strategy on NPD performance." In this research, a three-dimensional management framework for NPD is proposed, and it was empirically examined to see whether the risk management strategy using the survey data of Chinese firms affects the performance of NPD. The results suggest that risk management strategies targeted at specific risk factors, i.e. technology, organization, and marketing, individually and interactively affect the performance of new product development. Proper risk management strategies can significantly increase your chance of success.

Alirezaei et al [4] analyzed the effects of macroeconomic factors on investment risk management in the petrochemical industry. The results of this study, while confirming the existence of a significant relationship based on economic-financial theories between economic factors and investment risk in the petrochemical industry, emphasize the role of exchange rate variables and inflation rate in comparison with other research variables in investment risk control in the petrochemical industry rank the effects of changes in oil prices and the degree of economic openness in explaining the investment risk behavior in this industry. In another study, Mahmoudi Azar and Kimiaei [24] designed a new model for the valuation of financial contracts based on investment risk assessment. In this research, a new model for the valuation of financial contracts using guaranteed and participatory interest rates is presented. In classical models, the valuation of these contracts is determined using the sum of the conversion of future income and profits with a minimum guaranteed rate, such as a risk-free rate of return; but the proposed research model explains the value of these contracts using both guaranteed and participatory rates and exerting investor risk aversion and investment risk. In the next step, the conditional risk value is determined as an investment risk scale to be used to calculate the guarantee and participatory rates, and also to predict a fair value for the contract.

Tourism research has been performed in various fields. Some of these studies have investigated the different types of tourism such as religious tourism, historical tourism, and health or sports tourism, and others have tried to identify factors in tourism development and provide strategic plans. Research related to sports tourism is more concerned with identifying the factors for the development of sports tourism and its strategic plans [20], [21]. Research on risk and investment in tourism is limited. Most of the research in the literature regarding the issue of risk is concerned with the supply chain, industries particularly oil and gas, automobile, and pharmaceutical areas (in these industries most of the studies are commonly research and development projects or introduction of a new product) [6], [33], [36]. Most studies in the field of risk and risk management are technical and industrial in nature. Risk-

related research in non-technical areas has recently started in tourism, and in other areas such as sports, very limited research has been conducted in this field. The nature of sports projects is more delicate and complex than technical projects of risk analysis due to the existence of more cultural and social aspects. In the field of investment, most of the conducted research is related to the capital market, macroeconomics, and industries such as petrochemicals; therefore, due to the lack of research on the issue of risk in sports and investment in this area, the present study seeks to answer to the following questions. The first question is qualitative in nature and deals with the identification of risks in sports tourism projects. This question is: What are the risks of investing in sports tourism projects? The answer to this question will be provided through a systematic review of the background (meta-synthesis). The second question has a quantitative nature and concerns the prioritization of risks arising from meta-synthesis. This question is: What is the priority of investment risks in sports tourism projects? The answer to this question will be obtained through two techniques, Dematel and Aras. Given the limited research on risk and investment risk in tourism and sports tourism and the lack of a conceptual model or theoretical framework in the literature in this field, initially, these risks should be extracted from the background through an approach such as meta-synthesis and in the next stage, prioritization is done using a quantitative technique.

4 Research Methodology

The present study is positive research in terms of philosophical foundations and is applied in terms of orientation. Also, this study is survey research in terms of data collection and has a multi-method methodology. Since all the methods used in this study (Dematel and Aras) are quantitative, so the philosophical and paradigmatic basis of the research is positive. Due to the extraction of investment risks of sports projects through a systematic review of the literature and non-relying solely on previous models, the present study is exploratory in terms of purpose. The research results are used to reduce and manage investment risks in sports projects, so the research is practical. In the first stage, a systematic literature review is applied to collect risks and in the second stage, the most important tool for data collection is a questionnaire. The questionnaires utilized in the second stage are expert, Demate, and Aras's questionnaires.

Therefore, the present study is library research in the first stage in terms of data collection and a survey in the second stage. The validity of the expert questionnaire is approved according to the systematic review of studies related to investment risk and project risk as well as the approval of experts. On the other hand, due to the standardization of Dematel and Aras questionnaires and the use of risks screened by experts in these questionnaires, their validity is guaranteed. Combined research is divided into two categories of mixed and multiple studies in terms of the type of combined methods. Because all the methods used in this research (Binominal, Dematel, and Aras statistical tests) are quantitative and positive in nature, the current research is multiple studies in terms of methodology. The statistical population of the study included experts and specialists in the field of tourism and sports tourism. Also, the sampling has been performed judgmentally and by referring to experts. It is noteworthy that the sample size in this study is 10 people, whose characteristics are described in Table 1.

Table 1: Characteristics of the Research Experts

Row	Area of Expertise	No. of Experts
1	Sport experts	3
2	Tourism experts	3
3	Financial and investment specialists	4

The stages of the present research are as follows:

Stage 1: The risks of investing in sports tourism projects were first extracted by reviewing the literature. After calculating these risks, the factors were screened using a nonparametric Binominal test.

Stage 2: After the initial screening of the investment risks of sports projects with a Binominal test, once more these risks were screened with the DEMATEL technique and the ineffective factors were excluded.

Stage 3: After identifying the main risks, these risks were prioritized using the Aras technique.

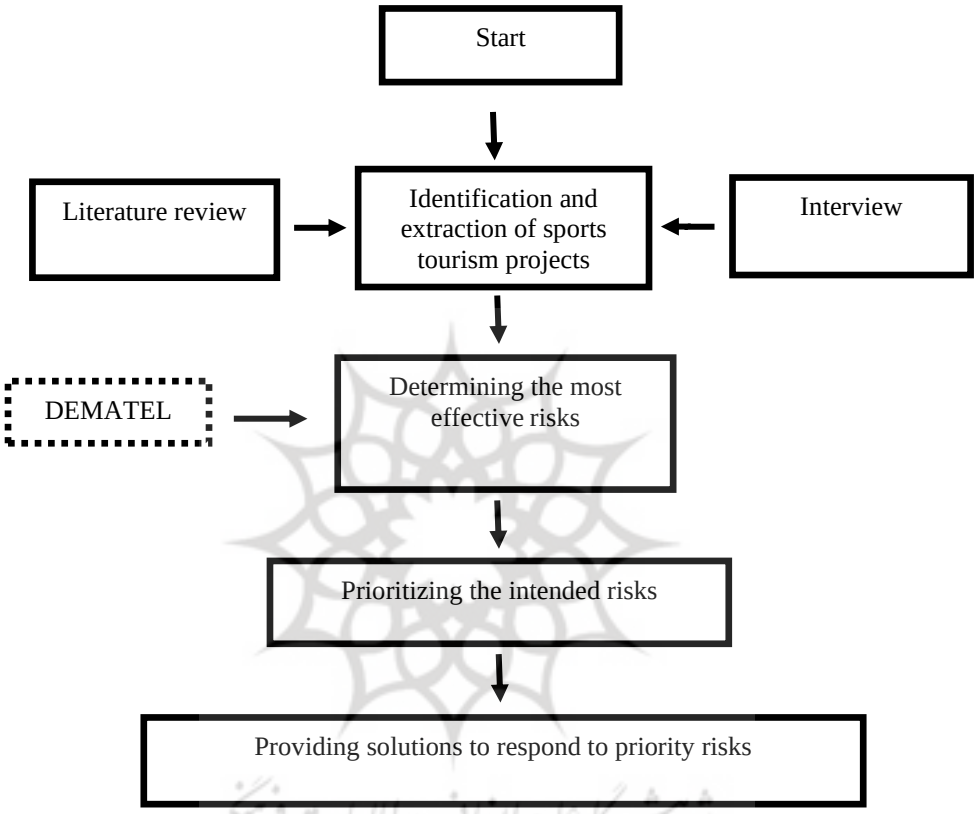

Fig.1: Research Steps

Each of these methods is described below. DEMATEL method is one of the different types of group decision-making based on pairwise comparisons and expert judgment, which was proposed by Gabus and Fontela to study and solve complex global problems and was used in strategic and objective goals of global problems, to achieve appropriate solutions. This method is based on diagraphs (directed graph) which, using the judgment of experts in identifying the factors in a system and applying the principles of graph theory, deal with extracting Intractability or impact relations of elements (cause-effect relations, reciprocal) and provides a hierarchical and systematic structure of them, in such a way that it determines the intensity of the effect of the mentioned relations in the form of numerical points. The DEMATEL method does not provide us with a ranking of options and factors, but it is used to identify the effectiveness and Intractability of factors and criteria.

The Aras method was proposed by Zavadskas et al. in an article entitled "A new additive ratio assessment (Aras) method in multi-criteria decision making." Typical multi-criteria decision-making

problems are used to rank a limited number of decision options, each of which must be evaluated simultaneously based on different criteria. Aras method determines the value of the utility function of a feasible option based on the relative values of the values and weights of the indices considered in a problem.
The stages of this method are as follows:

Stage 1: The decision matrix is formed as the following matrix in which m represents the number of options and n is the number of criteria:

$$x=\begin{bmatrix} \mathbf{x_{o1}} & \cdots & \mathbf{x_{oj}} & \cdots & \mathbf{x_{on}} \\ \vdots & \ddots & & \ddots & \vdots \\ \mathbf{x_{i1}} & \cdots & \mathbf{x_{ij}} & \cdots & \mathbf{x_{in}} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ \mathbf{x_{m1}} & \cdots & \mathbf{x_{mj}} & \cdots & \mathbf{x_{mn}} \end{bmatrix} \quad i=0,\ldots, \quad m؛ \quad j=1,\ldots, \quad n \tag{1}$$

In the above matrix, x_{ij} is the value of option j is the i-th criterion and x_{oj} denotes the optimal value of each criterion, which is defined as the following relation (2), (3):

$$x_j = \max x_{ij} \text{ .if} \max x_{ij} \text{ is preferable} \tag{2}$$

$$x_j = \min x^*_{ij} \text{ .if} \min x^*_{ij} \text{ is preferable} \tag{3}$$

Stage 2: The decision matrix is normalized as the following matrix:

$$\bar{x}=\begin{bmatrix} \bar{\boldsymbol{x}}_{\boldsymbol{o1}} & \cdots & \bar{\boldsymbol{x}}_{\boldsymbol{oj}} & \cdots & \bar{\boldsymbol{x}}_{\boldsymbol{on}} \\ \vdots & \ddots & & \ddots & \vdots \\ \bar{\boldsymbol{x}}_{\boldsymbol{i1}} & \cdots & \bar{\boldsymbol{x}}_{\boldsymbol{ij}} & \cdots & \bar{\boldsymbol{x}}_{\boldsymbol{in}} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ \bar{\boldsymbol{x}}_{\boldsymbol{m1}} & \cdots & \bar{\boldsymbol{x}}_{\boldsymbol{mj}} & \cdots & \bar{\boldsymbol{x}}_{\boldsymbol{mn}} \end{bmatrix} \quad i=0,\ldots, m؛ \; j=1,\ldots, n \tag{4}$$

where the normal values of the entries related to additive criteria are as follows (5):

$$\bar{x}_{ij}=\frac{x_{ij}}{\sum_{i=o}^{m} x_{ij}} \tag{5}$$

and the normalized values of the entries related to the reduction criteria are as follows (6):

$$x_{ij} = \frac{1}{x^*_{ij}} : \bar{x}_{ij} = \frac{x_{ij}}{\sum_{i=o}^{m} x_{ij}} \tag{6}$$

Stage 3: A normal balanced decision matrix is formed according to the following matrix:

$$\hat{x}=\begin{bmatrix} \hat{\boldsymbol{x}}_{\boldsymbol{o1}} & \cdots & \hat{\boldsymbol{x}}_{\boldsymbol{oj}} & \cdots & \hat{\boldsymbol{x}}_{\boldsymbol{on}} \\ \vdots & \ddots & & \ddots & \vdots \\ \hat{\boldsymbol{x}}_{\boldsymbol{i1}} & \cdots & \hat{\boldsymbol{x}}_{\boldsymbol{ij}} & \cdots & \hat{\boldsymbol{x}}_{\boldsymbol{in}} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ \hat{\boldsymbol{x}}_{\boldsymbol{m1}} & \cdots & \hat{\boldsymbol{x}}_{\boldsymbol{mj}} & \cdots & \hat{\boldsymbol{x}}_{\boldsymbol{mn}} \end{bmatrix} \quad i=0,\ldots, m؛ \; j=1,\ldots, n \tag{7}$$

$$\hat{x}_{ij} = \bar{x}_{ij} W_j; \; i = o \ldots . m \tag{8}$$

where $W_j$is the weight or importance of the j-th criterion and $\sum_{j=1}^{n} W_j$is equal to one.

Stage 4: The value of the optimization function of each option is determined using the following equation (9):

$$S_i = \sum_{j=1}^{n} \hat{X}_{IJ};\ \mathrm{i} = \mathrm{o} \ldots . \mathrm{m} \quad (9)$$

Stage 5: The degree of desirability of each option is calculated using the following equation (10):

$$K_i = \frac{S_i}{S_O};\ \mathrm{i} = \mathrm{o} \ldots . \mathrm{m} \quad (10)$$

The above expression indicates that the value of Ki lies in the range [1, 0]; the option with the highest value is the best option and the one with the lowest value is the worst option [5].

5 Findings

Investment risks for sports projects are extracted using a literature review. In this study, a meta-synthesis tool is used to extract investment risks. In this research, various databases related to the period 2000-2020 are evaluated. In the selected databases, specific keywords are used to search the relevant papers. Keywords such as project risk, investment risk, sports project, and sports tourism were searched. After an extensive search, 68 articles in this field were extracted in the mentioned period. The following algorithm shows the screening process of extracted papers.

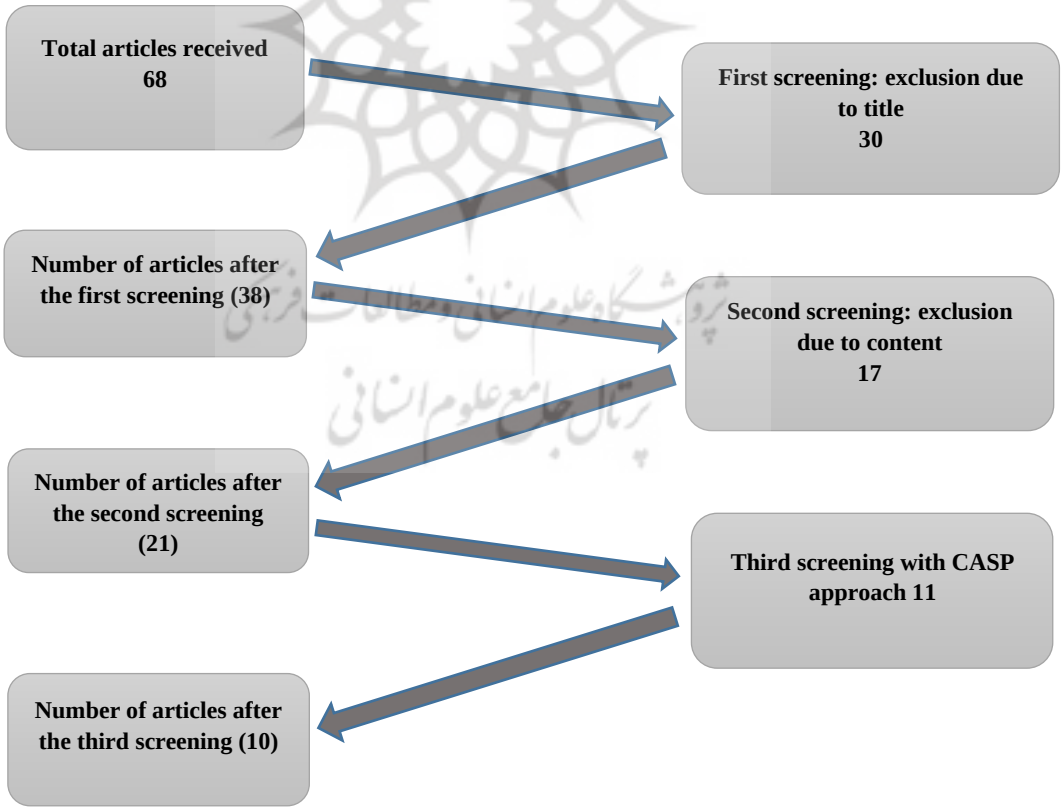

Fig.2: Article Screening Algorithm

Also, in this study, to increase the validity and accuracy of the results, the Critical Appraisal Skills Program is used to select the most appropriate papers. In this section, the obtained articles are reviewed by 10 questions of the CASP method, and the most desirable studies are selected. At this stage, the main objective is to extract the necessary key information from the papers. The logic of selecting articles is such a way that each of the ten indicators is given scores using scales ranging from poor (1) to excellent (5). Articles are then categorized into five categories. If the article score is above 40, the article is great for extracting code. In the third screening, the CASP method was used. In Table 2, the checklist form of this tool and the obtained score of the articles are given.

Table 2: Checklist for Article Evaluation

Criteria / Article code	Research objectives	Logic of method	Research plan	Sampling	Data collection	Reflection of acceptance	Ethical considerations	Accuracy of analysis	Clear expression of results	Research value	Total
1	5	4	5	5	4	5	5	5	5	5	48
2	4	4	5	5	5	5	5	3	5	5	46
3	2	2	2	5	3	3	2	3	2	3	30
4	5	5	5	5	4	4	3	4	5	5	45
5	3	2	2	2	2	3	2	3	2	3	24
6	5	5	4	5	5	5	5	5	4	4	47
7	3	2	1	2	2	3	3	1	3	2	22
8	1	2	3	2	2	3	4	3	2	3	25
9	3	1	1	2	3	2	3	2	3	4	24
10	1	2	3	2	2	2	3	1	4	3	23
11	4	5	4	4	5	5	4	4	4	4	43
12	2	1	2	3	4	3	2	3	2	3	25
13	5	4	5	4	4	5	3	4	4	4	42
14	1	2	2	2	3	1	2	1	2	1	17
15	2	2	3	3	4	4	1	1	1	2	23
16	4	4	5	4	4	5	4	4	4	4	42
17	5	5	4	4	4	4	5	5	4	5	45
18	2	2	5	3	4	3	3	1	1	2	26
19	5	5	4	5	5	4	5	4	5	5	27
20	2	1	1	2	3	3	2	1	2	3	20
21	5	5	4	4	3	5	5	4	5	5	45

As it is seen in Table 2, 10 articles have a score above 40 and are selected for code extraction. Once the final articles are identified, the criteria or research codes are extracted from these articles. The number of codes and sub-criteria extracted from the meta-synthesis was 13. These risks are listed in Table 3. After identifying and extracting the investment risks in sports projects, by applying a Binominal non-parametric test, insignificant factors are excluded. The results of screening the risks of investing in sports projects are presented in Table. The binominal test is a non-parametric test used to screen for poor criteria. If the coefficient of significance for a criterion is above 5%, that criterion is excluded. In this test, the null hypothesis indicates that the mean of the experts 'opinions about the

importance of the desired factor is less than or equal to 3, and the alternative hypothesis indicates that the mean of the expert's opinions about the desired factor is above 3. If the coefficient of significance for the factor is above 5%, i.e. the null hypothesis, which means that the mean of the experts' opinions is less than or equal to three, is confirmed. Experts also express their views in the expert questionnaire in a range of 5 scales.

Table 3: Investment Risks

Raw	Research Risks	Researchers	Descriptions
1	Risk of timely completion of the project	Baynal et al. [6]	If the project is not completed on time, it will have consequences such as stakeholder dissatisfaction and financial losses.
2	Environmental risks	Shin et al. [33]	Any project that does not take into account the sustainable development considerations can cause great damage to the social fabric and the urban environment.
3	Risks related to unexpected events	Yescombe [37]	Sudden changes and fluctuations in the project implementation process such as floods and earthquakes that may complicate the completion process
4	Operational risks	Yescombe [37]	These include poor project management, increased operating costs, increased project start-up time, and increased costs.
5	Market risks	Wang and Yang [36]	These include the existence of a secure market for tourism services, existing competitors, pricing of services, market predictability, and customers' purchasing power
6	Contract-related risks	Rahimi et al. [29]	Issues such as disregard for legal consequences, ambiguities in the contract, and incorrect estimation of costs can disrupt the work process.
7	Economic risks	Wang & Yang [36] Zamanian et al. [40] Zomorodian et al. [41]	Price fluctuations, radical changes in exchange rates and interest rates, and fluctuations in the economic environment in general disrupt project performance
8	Legal risks	Alirezaei et al. [4] Rahimi et al. [29]	Legal changes and the uncoordinated performance of parallel institutions in this area could damage the project
9	Financing risks	Azar & Kimiaei [24] Zanjirdar [40]	Issues such as poor financial resources, lack of timely and inexpensive financing can increase the cost of the project and even stop it at times.
10	stakeholder conflict risks	Wang, Liu & Mingers [38]	Existence of influential and powerful groups that have conflicting interests can disrupt the continuation of the project.
11	Risk of improper allocation of resources to project activities	Baynal et al. [6]	Lack of proper policy to effectively allocate the resources to various activities in the project, results in the disruption of work process.
12	Weakness in designers' knowledge and expertise	Shin et al. [33]	Improper design has a negative impact on the minds of the stakeholders for years after the project is completed.
13	Weakness in training and experience of project human resource	Baynal et al. [6]	Lack of technical, managerial, engineering, environmental, and social expertise affects project performance.

The sample size is 10 people who were selected judgmentally. The expert questionnaire used for risk

screening is distributed in two stages and the reliability of the questionnaire is evaluated by a non-parametric Wilcoxon statistical test at a 95% confidence level and it is observed that the results of the two stages were highly correlated.

Table 4: The Results of Binominal Test on Research Risks

Main factors	Category	N	Test Prop.	Observed Prop.	Exact Sig. (2-tailed)	Test results
Group 1 Group 2 Total Risk of timely completion of the project	<=3 > 3	10	0.50	0.41 0.59	P<0.001	Accepted
Group 1 Group 2 Total Operational risks	<=3 > 3	10	0.50	0.42 0.58	P<0.001	Accepted
Group 1 Group 2 Total Market risks	<=3 > 3	10	0.50	0.32 0.68	P<0.001	Accepted
Group 1 Group 2 Total Contract-related risks	<=3 > 3	10	0.50	0.44 0.56	P<0.001	Accepted
Group 1 Group 2 Total Economic risks	<=3 > 3	10	0.50	0.25 0.75	P<0.001	Accepted
Group 1 Group 2 Total Legal risks	<=3 > 3	10	0.50	0.24 0.76	P<0.001	Accepted
Group 1 Group 2 Total Financing risks	<=3 > 3	10	0.50	0.36 0.64	P<0.001	Accepted
Group 1 Group 2 Total stakeholder conflict risks	<=3 > 3	10	0.50	0.23 0.77	P<0.001	Accepted
Group 1 Group 2 Total Risk of improper allocation of resources to project activities	<=3 > 3	10	0.50	0.34 0.66	P<0.001	Accepted

After identifying the main risks and excluding the insignificant risks, a secondary screening was performed using the DEMATEL method. The matrix of direct effects of the main risks is given in Table 5. The values shown in the table are the mean of opinions provided by 10 research experts who provided their opinions on a 4-item scale.

After normalizing data of the direct effect matrix (M) and multiplying it by the inverse of the matrix (I-M), the total relation matrix is extracted. The matrix of total relations is shown in Table 6. According to the data of the total relation matrix, the values of the interaction index and the net effect index for each of the risks are obtained. Table 7 shows the values of the study indices.

Table 5: Matrix of Direct Effects of the Main Risks

Specification	Risk of timely completion of the project	Operational risks	Market risks	Contract-related risks	Economic risks	Legal risks	Financing risks	Stakeholder conflict risks	Risk of improper allocation of resources to project activities
Risk of timely completion of the project	0	2.25	1.11	1.24	0.43	0.35	1.24	0.14	0.15
Operational risks	0.54	0	0.22	0.23	0.44	0.56	3.25	0.22	2.42
Market risks	3.25	3.56	0	2.88	1.22	2.24	1.11	3.78	3.84
Contract-related risks	2.11	1.14	0.23	0	0.12	0.13	0.15	0.36	1.24
Economic risks	3.48	3.98	1.2	2.25	0	1.1	2.25	0.11	3.74
Legal risks	2.45	3.48	1.25	3.98	0.98	0	1.14	3.87	2.79
Financing risks	3.25	3.87	0.25	2.98	0.78	1.11	0	0.98	3.98
stakeholder conflict risks	2.98	1.36	0.25	1.46	0.25	0.39	0.78	0	2.58
Risk of improper allocation of resources to project activities	2.25	1.45	0.28	0.39	0.74	0.24	0.53	0.46	0

The net effect index denotes that if this index is positive, the effects of the factor on the whole system are greater than the number of system effects on that factor.

Also if the net effect index is negative, it means that the effects of the system on the intended factor are greater than the effects of the factor on the whole system. According to the net effect index, market risks, economic risks, legal risks, financing risks, and stakeholder conflict risks are selected according to their effectiveness.

Table 6: Total Relation Matrix

Specification	Risk of timely completion of the project	Operational risks	Market risks	Contract-related risks	Economic risks	Legal risks	Financing risks	stakeholder conflict risks	Risk of improper allocation of resources to project activities
Risk of timely completion of the project	0.0587	0.1603	0.0628	0.0968	0.0359	0.0361	0.0962	0.0332	0.0736
Operational risks	0.0981	0.0781	0.0260	0.0629	0.0403	0.0459	0.1796	0.0371	0.1778
Market risks	0.3033	0.3156	0.0428	0.235	0.0969	0.1412	0.1518	0.2281	0.322
Contract-related risks	0.1265	0.0891	0.0217	0.0238	0.0163	0.0166	0.0342	0.0286	0.087
Economic risks	0.280	0.3124	0.0879	0.1885	0.0389	0.0886	0.1886	0.0587	0.2927
Legal risks	0.2532	0.2904	0.0898	0.2652	0.0802	0.0402	0.1405	0.2206	0.2625
Financing risks	0.2531	0.2832	0.0429	0.2020	0.0666	0.0796	0.0807	0.0839	0.280
stakeholder conflict risks	0.1959	0.1310	0.0309	0.1082	0.0307	0.0359	0.0785	0.0233	0.1721
Risk of improper allocation of resources to project activities	0.1440	0.1169	0.0275	0.0518	0.0461	0.0259	0.0601	0.0372	0.0482

The following Fig. 3 shows the status of each risk in the DEMATEL diagram. In the figure below, the factors at the top of the chart are more influential and if a factor has a higher interaction index (located

to the right of the chart), the total effects given and received related to the factor are higher compared to other factors. As shown in the figure, the market risk factor has the highest net effect, and the operational risk factor has the highest interaction index.

Table 7: Evaluation Indices in DEMATAL

Risk	Total effects given by factor i to the other factors (R_i)	Total effects by factor j from the other factors (C_j)	Interaction index (R_i+C_j)	Net effect index (R_i-C_j)
Risk of timely completion of the project	0.6541	1.713	2.367	-1.0592
Operational risks	0.746	1.77	2.523	-1.0313
Market risks	1.837	0.432	2.27	1.405
Contract-related risks	0.444	1.234	1.678	-0.79
Economic risks	1.536	0.452	1.989	1.084
Legal risks	1.643	0.5104	2.153	1.132
Financing risks	1.372	1.0105	2.382	0.361
stakeholder conflict risks	0.806	0.751	1.558	0.0557
Risk of improper allocation of resources to project activities	0.558072	1.716	2.274	-1.158

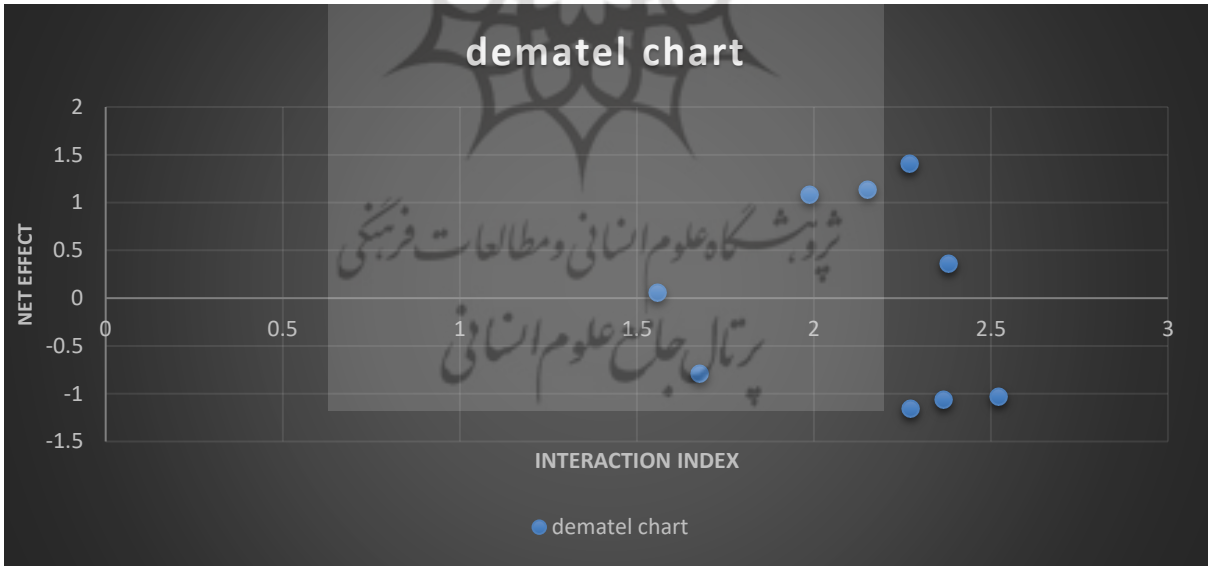

Fig.3: DEMATEL Chart

Subsequently, using the Aras technique, the most effective risks are prioritized. The table below shows the decision matrix of the most effective risks from the experts' point of view. At this stage, 5 experts participated in the survey and expressed their opinions on a 9-item scale. The last line shows the desired values, which here are considered as the maximum score limit, i.e. 9.

Table 8: Decision Matrix of the Most Effective Risks

Most effective risks	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
Market risks	9	7	5	5	3
Economic risks	7	3	9	9	7
Legal risks	3	5	7	5	3
Financing risks	7	9	5	3	3
stakeholder conflict risks	5	9	3	3	3
Desired values	9	9	9	9	9

Then the values of the decision matrix are normalized and multiplied by the weight of the experts' opinions (here the weight of all experts is considered to be the same and equal to 0.2). The resulting matrix is a normal balanced matrix.

Table 9: The Normal Balanced Matrix of Risks

Most effective risks	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
Market risks	0.045	0.0333	0.0263	0.0294	0.0214
Economic risks	0.035	0.0142	0.0473	0.0529	0.05
Legal risks	0.015	0.0238	0.0368	0.0294	0.0214
Financing risks	0.035	0.0428	0.0263	0.0176	0.0214
stakeholder conflict risks	0.025	0.0428	0.0157	0.0176	0.0214
Desired values	0.045	0.0428	0.0473	0.0529	0.0642

In the end, the score of each option is calculated from the sum of the values of the normal balanced matrix. To obtain the relative score of each option, the sum of the line for each option is divided by the sum of the line of the desired option. The option with the higher relative score has a higher rank. Table 10 shows the relative scores and rank of each factor.

Table 10: Scores & Ranks of Risks

Most effective risks	Score of each option	Relative score of each	Final rank
Market risks	0.155	0.615	2
Economic risks	0.199	0.790	1
Legal risks	0.126	0.501	4
Financing risks	0.1432	0.567	3
stakeholder conflict risks	0.122	0.486	5

According to the results of the table, economic, market, and financing risks had the highest priority for experts.

6 Discussion and Conclusion

The purpose of this study is to identify and prioritize the investment risks of sports projects in the tourism industry. For this purpose, first, by reviewing the literature in the field of sports tourism, the risks of investing in sports projects are extracted. Then, in two stages, using binomial statistical techniques and the DEMATAL technique, these risks are screened and the remaining risks are prioritized using the ARAS technique. The three risks, i.e. economic, market and financing, have the highest priority. In terms of economic risks, as variables such as interest rates, exchange rate fluctuations, and inflation are not considered and correctly estimated, serious problems are caused to continue the project. Therefore, accurate estimation of the current and future project costs and revenues and correct analysis of changes in these costs and revenues in the future are very important in estimating the project profitability. In this regard, using the proper methods of predicting and paying attention to the surrounding legal and political changes can increase the accuracy of estimates and greatly reduce the associated risks. One of the risk response methods in this area is to use alternative and flexible plans and scenarios to be implemented as the situation changes. The use of alternative programs and scenarios increases the resistance to the design in times of crisis. Of course, it is better to act based on the most probable scenario, but with alternative scenarios, if the situation changes, a revision is needed.

In terms of market risks, not paying attention to issues such as purchasing power of the customers, real needs of the customers, the attractiveness of service to the market, capabilities of competitors, and resistance of some powerful and influential groups can face the continuation of the project and its speed with serious problems. Due to the same reason, accurate analysis of the market and its demands and bargaining with various project stakeholders are very important to achieve common goals. The application of soft approaches such as soft systems methodology to model and identify the multiple interests of stakeholders can be useful. In the past, models and methods only considered the views and opinions of specific individuals and groups, who are called problem owners. The main goal in such problems was optimization with an emphasis on economic variables. Of course, in these cases, only the economic interests of certain sectors and groups were optimized, and most groups and stakeholders were ignored. Gradually, other variables, such as social and environmental issues, became important to project designers. A project can be successful if it attracts the commitment and participation of local stakeholders, and this would be possible only by considering the interests of the local community. Researchers, on the other hand, attach great importance to the issue of sustainable development, and many non-governmental organizations and groups put pressure on decision-makers and policymakers. Therefore, project designers must take into account environmental considerations and seriously pursue the compatibility of project specifications with the environment.

Another common problem in most projects, especially sports projects, is the issue of financing. The resources required for project activities and the way to provide them must be identified in advance. In this regard, optimistic approaches should be excluded, and planning should be done based on the most probable case. In addition to discussing financing patterns, proper allocation of financial resources to project activities can also reduce financing risks. Another point is the variety of financing methods. Instead of relying solely on conventional financing methods, new methods such as crowdfunding can be used. One of the most significant initiatives in entrepreneurial business capital, which is created spontaneously using social programs and is very effective, especially for start-ups, is crowd-financing, which can include loans given to companies, participation in starting a business, acquisition of property, or financing of social projects.

In summary, in the field of financing risks, diversification of financing methods, prediction of financing methods and resources before starting a project and monitoring the correct allocation of resources to activities and proper management of priorities play a critical role in risk management. Regarding the suggestions for future research, in terms of methodology, the use of a meta-synthesis approach to extract risks and apply distance techniques such as EDAS or CODAS along with Aras weighting methods to validate the results is recommended. In terms of subject, this research can also be implemented in other tourism projects such as religious tourism.

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