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Identifying and Ranking the Factors of the Foreign Investment in the Development of Iran's Free Trade Zones Using MCDM Approach

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Abstract

Considering the position of free zones in the country's commercial development, the present study identifies and ranks the factors affecting the attraction of domestic and foreign investments in the development of Iran's free trade zones and is customized in Amirabad port free zone. The present study is in the group of descriptive-survey research in terms of applied purpose and data collection method, which used statistical tests and Multi-Criteria Decision Making (MCDM) approach. In this regard, the statistical population of the study includes all actual and potential investors and managers of economic units located in the Amirabad Behshahr Free Zone, of which 385 people were analyzed using a questionnaire. The results obtained in the present study at the second level show that the first and the most important criteria is the management issues, followed by strategic planning, infrastructure, economic policies, laws and regulations, and finally location. Next, the most important factor is related to facilities and infrastructure, followed by the existence of natural resources and public budget allocation.

Keywords: Investment attraction, Export development, Free trade zones, Amirabad port, MCDM approach.

1 | Introduction

Economic development requires investment in various sectors and economic activities. Without investing in infrastructure and superstructure projects, one cannot expect the expansion of employyment, production, and economic prosperity. Today, many countries in the world have a strong desire to attract foreign investment. The experience of using free zones in developing countries has been a key component of the export development strategy framework with the aim of attracting foreign investment, developing industrial exports, creating employment, and acquiring new technology. Therefore, different countries have tried to create industrial-commercial zones in different ways. One of the useful and suitable ways for this purpose is to create free trade-industrial zones. Since this program is at the top of our country's grand plans. The capital factor is one of the main factors in the growth and development of countries and other economic variables such as

employment, GDP, supply of goods and services, etc. are directly affected by this factor [1]. The free trade zones are one of the most important items in the supply chain of different products [2], [3].

The rapid growth of free trade zones has led to the development of such zones in the country after the port of Hamburg (1888) and Ireland (1959). These include the Manaus Free Trade Zone (in Brazil), the Maritime Free Zone (in Mauritius), the Karachi Free Zone (in Pakistan), the Masan and Erie Wakumi Free Zone (in South Korea), the Candella Free Zone, and Santa Cruz Electronics In India), Shiko, Xiamen, Shenzhen, Zhuhai, Shanto, Hanyan and Pudong Free Zones (in China), Ataturk Airport Free Zones, Mersin, Antalya, Aegean, Istanbul Leather, Istanbul (in Turkey), Jebel Ali Free Zones, Ahmad Ibn Rashid (in Dubai), Jakarta Free Zone (in Indonesia), etc. in Asia.

Statistics show that from 1970 to 1994, 283 regions were established in the United States, 93 regions in Europe, 43 regions in Africa, 27 regions in the Middle East, 83 regions in the Far East, and a total of 526 free zones in the world. According to official statistics of international organizations, by 2003, more than 3,000 free zones have been established in 116 countries [4]. In Iran, the provisions and tasks of the Vision 1404 document have outlined Iran's position as the first developed country in the region, and in line with the objectives of the document, the country's five-year development plans, including the Fourth Development Plan, policies and programs have determined and specified clear provisions for different economic sectors of the country, including the provisions of article 35 of the Fourth Plan Law as tasks related to the development and expansion of infrastructure and infrastructure of free trade-industrial zones in order to realize capacity [5]. Mentioned the potential opportunities of these areas. Statistics show that the share of 6 free zones in the total amount of foreign investment attracted in the last 9 years has been less than 2 billion dollars [5]. Nearly 20 years have passed since the establishment and operation of the country's free zones.

Over the years, despite the costs and efforts made, the infrastructure and facilities needed to define a ready-made model developed and organized in accordance with international standards are still not available. Attracting investors is slow, and despite the abundant natural resources and reserves and the potential economic prospects of free zones, which puts them in the regional and global rankings in terms of this index, unfortunately, domestic and foreign investors tend to they do not have much to invest. Those who enter this field and are willing to bring their capital to these areas despite the existing shortcomings are so involved in bureaucracies that they either leave the job in half or are willing to leave without any eyes. They had to raise their capital and travel to a safer place. Reports indicate that during the 9 years of 80-88, the free zones of the country have attracted a total of less than $ 2 billion in foreign investment, which indicates the failure of these zones in attracting foreign investment.

Since foreign investment is directly related to the state of infrastructure in free zones; therefore, in the current situation, it is the only Kish Free Zone that has relatively better infrastructure and has been more successful in attracting foreign capital than other regions.

According to the presented materials, in the present study, the factors affecting the attraction of domestic and foreign investments in the export development of Iran's free trade zones (specifically the Amirabad Port Free Zone of Behshahr) have been identified and ranked.

For this purpose, several variables such as infrastructure, laws and regulations, management, economic policies, strategic planning, and location factor are considered as variables affecting domestic and foreign investment in the free zone of Amirabad port of Behshahr. It seems that studying this issue and presenting empirical evidence in this section can be useful and useful for many people and areas involved in free trade zones. Thus, the main question of the research is as follows: what are the factors affecting the attraction of domestic and foreign investments in the development of exports of Iran's free trade zones (Amirabad port free zone), and what are their prioritization?

The reaming of the paper is organized as follows: in Section 2 the research background is presented, in Section 3 the methodology and in Section 4 the numerical results are presented. Finally, in Sections 5 and 6 the discussion and conclusion are provided.

2 | Theoretical Foundations and Research Background

In today's world of societies, capital has a high opportunity cost. Hence, it settles in communities and plays a role in the process of economic value creation that has less risk and higher income. The emphasis on the importance of the issue is not only rooted in this issue, but many countries in the world are facing a lack of capital and capital resources, and today the role of capital is something more than this. Foreign capital does not only play the role of financing a country's shortage of financial resources. The key point here is that the investment management of any society can and should attract foreign capital with its own art, as well as capital belonging to the natives living abroad, in order to bring the said technical and technological knowledge with them. Publish it by working in the host community. Thus, technical knowledge and technology, in practice, experience the process of localization, i.e., adaptation to its environment, in order to be closer to the optimal point of factor productivity. Indigenous people's access to this technical and technological knowledge naturally determines the position of society in the international division of labor [5].

The World Bank aims to create free trade zones in the short term, increase exports, create employment opportunities, encourage investment and accelerate the development of the region and the host country in the long run, transfer technology, acquire and improve management skills and economic growth The country knows.

Evidence obtained in Azad and Rostamnya [6] research shows that among the variables considered staff training as the most important factor and then the variables of employee resistance, information technology acceptance and user behavior, organizational culture, low-level awareness of users about technological advances, and ultimately competition among different competitors are the next influential factors in this field. Behname [7] concluded that the ELG hypothesis (the hypothesis that exports lead to economic growth) was given only for the postwar period. The results of the analysis of the expropriation correction model provided an important determinant to explain the changes in GDP. In addition, both in the short run and in the long run, exports have been the cause of Granger relative to GDP.

Free Zones in Iran according to note 19 of the law on the first program of socio-economic development, the Islamic Republic of Iran more or less for reasons similar to what was proposed for other countries and considering the important principle in creating free zones, namely attracting foreign capital and export development to in order to achieve goals such as accelerating the implementation of infrastructure, development, economic growth and development, job creation, investment, production and export of goods was created. At that time, it was not possible to remove the many restrictions imposed on the Iranian economy in the first years of the revolution and during the war, all at once. Therefore, the formation of free zones was considered by the officials in order to remove economic constraints and attract foreign investment and export development. After the end of World War II, free trade zones expanded rapidly around the world [8]. Among these, free trade-industrial zones or export-import processing zones as one of the tools to expand industrial exports and facilitate countries' access to global markets have been considered by most governments and economists. Today, the experience of many countries, such as China, South Korea, and Taiwan, shows that by creating free trade zones, it is possible to attract foreign investment and increase the development of exports of industrial goods and, consequently, the country's foreign exchange earnings. These areas with tax and customs exemptions and avoidance of domestic deterrent laws, having appropriate infrastructure facilities and efficient executive organizations, etc. can attract foreign investment due to the use of comparative advantages such as cheap labor and Attract raw materials and proximity to consumer markets.

Alguacil et al. [9] stated that host governments should develop a set of policies that not only focus on increasing foreign direct investment but also develop their economic and political framework. Prasanna [10] concluded that the effect of foreign direct investment flows on the country's exports is significantly positive. Mijiyawa [11] showed that political factors, economic factors (infrastructure); Social and cultural factors are ranked first to fourth, respectively. The results of Pegkas [12] show that there is a positive relationship between foreign direct investment and economic growth.

The results of the study by Mosusavi Zadeh et al. [13] show the existence of a two-way causal relationship between foreign direct investment and exports. Abdollahzadeh and Mirbargkar [14] stated that indicators in the category of economic factors include tax cuts and financial risk, which increase the attraction of foreign direct investment, as well as trade agreements, market size, GDP growth, exchange rates, proximity to large markets, labor productivity, which is significantly effective in attracting expenditure investment. Indicators of country characteristics include political interference, ethnic, religious, and military tensions, common language, government instability, financial risk, corruption, and the red line of bureaucracy and political violence, which are significant in attracting foreign direct investment.

Rasyid [15] assessed the net impact of the free zones and uses an experimental approach. In this research, the implementation of the free zones presented as a natural influence on a decrease in prices of specific products. Chen et al. [16] proposed a development performance evaluation system for a typical free trade zone that was established on the basis of theoretical models and empirical research. Several free trade zones were selected in China and the assessed the proposed system on each of them. The development performances of these zones were evaluated using a system built by combining an Analytic Hierarchy Process (AHP) with a grey relational analysis. Fontalvo et al. [17] applied a methodology for evaluation and forecasting for companies located in the Industrial Port Zone of the city of Barranquilla, Colombia. Based on a comprehensive analysis, supported by the concepts of technical efficiency, purely technical efficiency, and additive efficiency, the efficiency of scale and of mixing, as well as in the algorithm. Mohamadzadeh et al. [18] assessed and evaluated some of the social outputs of the various investment applied in the Manaus Free Trade Zone. It was aimed to determine whether factors in labor standards and social conditions in the Manaus Industrial Pole are capable of generating positive spillovers in Manaus and surrounding areas. Teixeira [19] assessed the current and desirable strategies of development in university management and propose a development strategy for university management in accordance with the requirements of the Free Trade Zone Policy in Hainan of China.

According to the research literature as well as the backgrounds presented inside and outside the country to identify and rank the factors affecting the attraction of domestic and foreign investment in the export development of Iran's free trade zones (Amirabad port free zone) were identified. Accordingly, the variables considered are infrastructure, rules and regulations, management, economic policies and strategic planning, and location factor. In addition, each of these variables also includes subcomponents that are specified in the conceptual model. Thus, the conceptual model of the present study is as follows. The conceptual model of the present study is as *Fig. 1*.

3 | Research Methodology

The method of the present research is applied in terms of purpose. Also, in terms of research method, it is considered in the field research group. Finally, in terms of the inference method, it is considered as analytical (or inductive) inference. Also, in the present study, the statistical population includes all actual and potential investors and management of economic units located in the Amirabad Behshahr Free Zone. Amirabad Special Economic Zone, as the largest port on the Caspian Sea and the third generation port of the country, has opened a new horizon in the economic prosperity of the north of the country. Amirabad can be considered as one of the most successful ports in attracting private sector investment. Extensive support lands (1060 hectares) along with infrastructure facilities and economic costs resulting from the legal benefits of special economic zones and value-added tax exemptions have provided a suitable and safe platform for domestic and foreign private sector investment. Therefore, in other words, the statistical

population of the study includes all domestic and foreign investors (in manufacturing, industrial, service, and commercial sectors) in the Amirabad region of Behshahr. To select the sample size from the Cochran sampling formula and using random sampling method is available.

In order to find the importance of each of the indicators in *Fig. 1*, the AHP is used. This technique is a powerful and flexible method in the category of multi-criteria decision-making methods by which complex problems can be solved at different levels. For this reason, it is called a hierarchical model because it is a tree model and hierarchy. The AHP method combines both objective and subjective evaluation in an integrated structure based on scales with even comparisons and helps analysts organize the essential aspects of a problem into a hierarchical framework. Among the advantages of this method can be mentioned: measuring the consistency of decision makers' judgments, creating pairwise comparisons in choosing the optimal solution and option, the ability to consider criteria and sub-criteria in evaluating options, creating the ability to achieve the best option through Paired comparisons.

The AHP method is a way to help make decisions and emphasizes the importance of a decision maker's intuitive judgments as well as the stability of comparing alternative options in the decision process. Because a decision-maker makes his or her judgments based on knowledge and experience and therefore makes decisions based on this, the AHP approach is consistent with the behavior of a decision-maker. The strength of this approach is that it regularly organizes tangible and intangible factors and offers a structural but relatively simple solution to decision problems.

In addition, by breaking a large logical problem and then descending gradually, to smaller and smaller, one is able to connect the small to the large through simple pairwise comparison judgments. This study uses the following methods to collect data and information:

Documentary method: in order to present the basics of the research, specialized Persian journals (for example, Jihad Daneshgahi Journal) and international journals are used.

Field: a questionnaire tool will be used to collect data in this research. The present research questionnaire follows Mosusavi Zadeh et al. [13]. Finally, it should be noted that the questionnaire used in this study is standard and its validity has already been proven. However, Cronbach's alpha measurement method has been used in this study for its reliability or reliability. For this purpose, the first 30 questionnaires were distributed and Cronbach's alpha was prepared. Given that the value obtained for Cronbach's alpha coefficient is higher than 0.7, it can be said that it has an acceptable reliability test.

4 | Numerical Results

4.1 | Descriptive Statistics

The results for demographic characteristics are shown in *Table 1*.

Table 1. Summary of description population cognitive sample research.

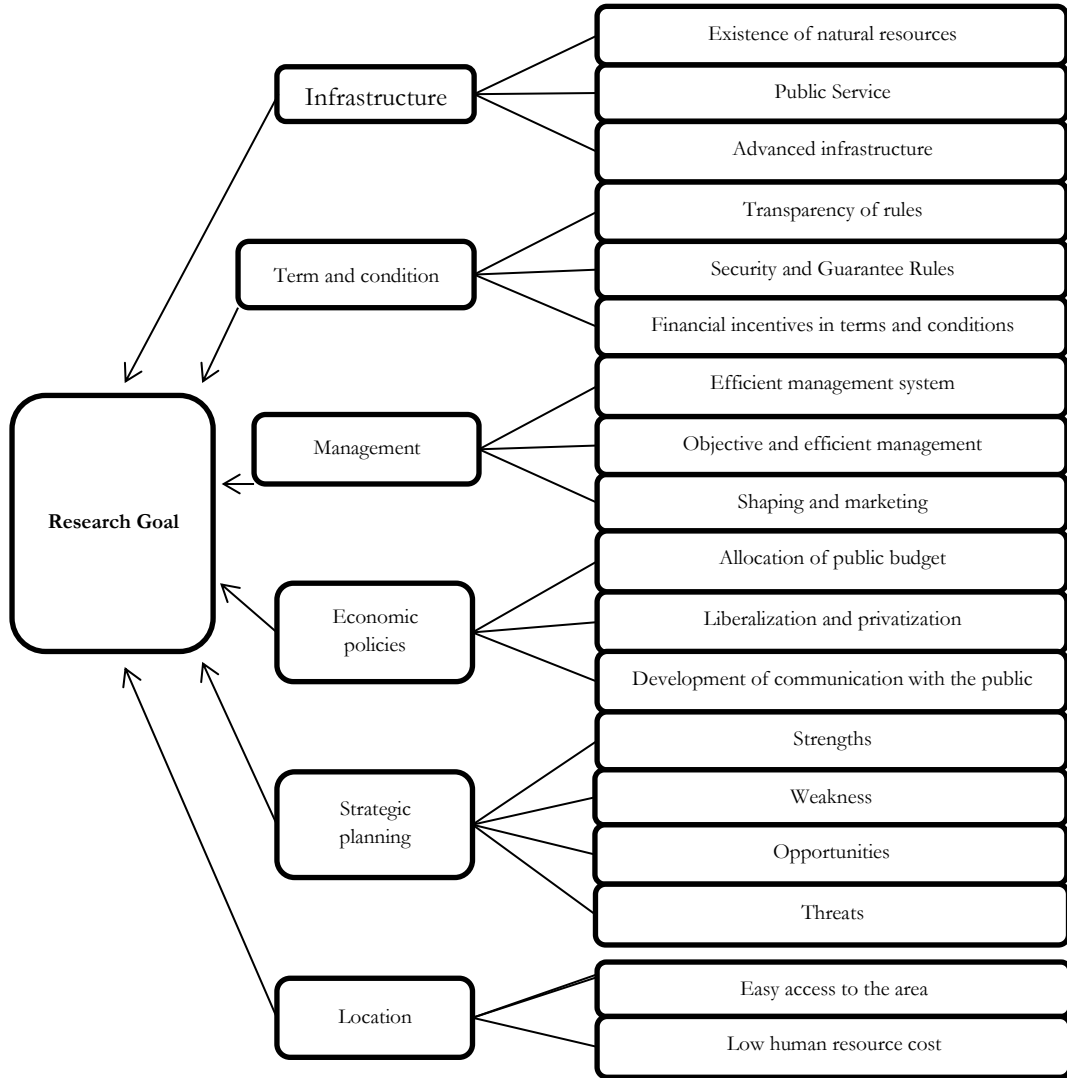| Component-Display	Specifications	Number	Abundance
Gender	Man	363	94.3
	Female	22	5.7
Marital status	Married	385	100
Level of education	Bachelor's degree and lower	290	75.3
	Master degree and higher	95	24.7
Years of service	Less than 10 years	93	24
	10 years to 20 years	210	54.5
	20 years and older	82	21.5

Fig. 1. The Proposed conceptual model.

In addition, in order to describe the data, the mean and standard deviation of the research data were used. A summary of descriptive statistics related to research variables is given in *Table 2*.

Table 2. The weight of each criterion and the range of results.

Weighted Average	Criteria	Minimum	Maximum	Average	Standard Deviation
4.1	Infrastructure	1	5	4.1	0.576
	Facilities and infrastructure	3	5	4.2	0.802
	Public Service	3	5	4.4	0.775
	Advanced infrastructure	1	5	4.1	0.803
	Terms and conditions	1	5	3.8	0.795
3.8	Transparency of rules	1	5	3.6	0.865
	Security and guarantee rules	1	5	4.1	0.776
	Financial incentives in terms and conditions	1	5	3.6	0.854
	Management	1	5	4.2	0.963
4.2	Objective and efficient management	2	5	4.6	0.971
	Useful management system	2	5	4.3	0.823
	Shaping and marketing	2	5	3.6	0.782

Table 2. Continued.

Weighted Average	Criteria	Minimum	Maximum	Average	Standard Deviation
3.7	Economic policies	1	5	3.7	0.756
	Allocation of public budget	2	5	3.9	0.795
	Free and Privatization	2	5	4.1	0.931
3.7	Development of communication with the public sector	1	5	4.1	0.854
	Strategic planning	1	5	3.7	0.756
	Strengths	2	5	3.8	0.751
	Weakness	2	5	3.9	0.767
	Opportunities	2	5	3.6	0.937
	Threats	2	5	3.8	0.867
3.5	Location	1	5	3.5	0.966
	Existence of natural resources	2	5	4.1	0.886
	Easy access to the area	2	5	3.6	0.711
	Low human resource cost	2	5	3.4	0.968

As can be seen, based on the opinions and professional experience of experts, the most important criterion is related to management because it has the highest weighted average among the criteria related to the management variable, which is equal to 4.2. On the other hand, the weakest criterion is location because it has the lowest weighted average among the relevant criteria, which is equal to 3.5.

4.2 | Normality Test of the Data

Kolmogorov-Smirnov test was used to evaluate the normality of the components of the pattern dimensions and in all tests, the statistical hypothesis is as *Table 3*.

Table 3. Kolmogorov -Smirnov test results.

Components	Significance Level (Sig)
Infrastructure	0.087
Terms and conditions	0.081
Management	0.0056
Economic policies	0.072
strategic planning	0.064
Location	0.096

As can be seen in *Table 3*, the Kolmogorov-Smirnov test is significant for the research data, i.e. the significance level is greater than 0.05, so the data have a normal distribution.

4.3 | Results Obtained in the Form of the MCDM Approach

In this section, we try to first display the information obtained from the AHP in the form of tables and then analyze the research hypotheses with respect to the research data which is provided in *Fig. 2*.

At the first level of the decision tree, the target is the factors that affect the attraction of domestic and foreign investors. At the second level, the main criteria affecting the attraction of domestic and foreign investments are presented. The relative weight and priority order of these criteria are in *Table 4*.
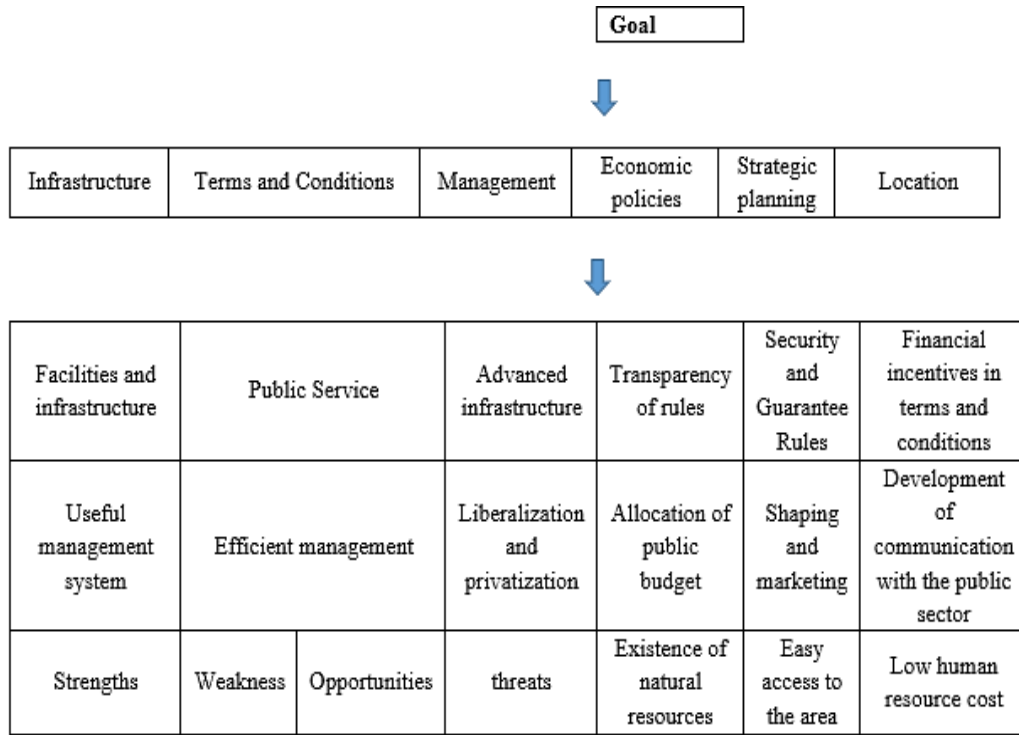
Fig. 2. The structure of the hierarchical process in the applied AHP.

Table 4. Interpretation of second-level priorities.

Main Criteria	Relative Weight	Priority
Management	0.2853	1
Strategic planning	0.1984	2
Infrastructure	0.1943	3
Economic policies	0.1585	4
Terms and conditions	0.0874	5
Location	0.0765	6

By analyzing the data in the table above, it can be concluded that management plays an important role in attracting domestic and foreign investments, followed by strategic planning, infrastructure, economic policies, laws and regulations, and location, respectively. The third level includes the following 19 criteria, which are regularly presented in *Table 5*.

Table 5. Interpretation of third-level priorities.

Sub-Crietria	Relative Weight	Final Weight	Priority
Facilities and infrastructure	0.434	0.149	1
Existence of natural resources	0.547	0.130	2
Allocation of public budget	0.545	0.121	3
Efficient management	0.400	0.101	4
Security and guarantee rules	0.400	0.084	5
Advanced infrastructure	0.387	0.072	6
Strengths	0.170	0.064	7
Useful management system	0.400	0.054	8
Development of communication with the public sector	0.181	0.047	9
Opportunities	0.270	0.035	10
Easy access to the area	0.264	0.029	11
Financial incentives in terms and conditions	0.400	0.024	12
Threats	0.423	0.018	13
Liberalization and privatization	0.272	0.015	14
Low human resource cost	0.187	0.014	15
Transparency of rules	0.200	0.013	16
Public service	0.162	0.011	17
Weakness	0.135	0.010	18
Shaping and marketing	0.200	0.009	19

In this way, the nineteen priorities were identified. Accordingly, facilities and infrastructure have the highest priority, and shaping and marketing have the lowest priority.

5 | Discussion

The general results obtained in the present study show that from the respondents' point of view, the most important factor influencing the attraction of domestic and foreign investments is management. This points to the important role of managers and their position in terms of respondents. It seems that if we rely on proper and efficient management, desirable results can be achieved in the field of free zones and trade in these sectors. Managers of Amirabad Free Zone should also rely on new systems and the design and marketing of Amirabad port in accordance with international standards.

The second factor considered by respondents in order to attract domestic and foreign investment is strategic planning. When it comes to planning, the emphasis is on long-term, medium-term, and short-term plans. But in the meantime, long-term planning shows a roadmap that can have a long-term impact on an organization's decisions. On the other hand, the second priority may be considered to follow the first priority. When respondents emphasize good management, their vision is to have a well-written and long-term plan that can ensure the efficiency and effectiveness of the organization. At the same time, relying on these programs can identify strengths and weaknesses as well as opportunities and environmental threats. Therefore, managers in this field should work harder on strategic planning and identify strengths and weaknesses. Taking advantage of environmental opportunities and reducing threats can bring many benefits to the region in the future.

The third important factor in attracting domestic and foreign investment from the perspective of respondents is infrastructure. Certainly, the existence of facilities and infrastructure such as water, electricity, advanced telephone networks, high-powered Internet of modern ports, usable ports, equipped airports in the region and the size of new urban areas, and in addition, facilities such as tourist areas and Recreation can add to the attractions of the Amirabad region of Behshahr. Fortunately, the Amirabad port of Behshahr, next to the Miankaleh wildlife tourist area, can provide many attractions for traders and even domestic and foreign tourists. In addition, due to its distance from the urban area, the Amirabad region has pristine and beautiful landscapes that can enclose any tourist. The use of these competencies requires proper management, which will make possible the commercial development of the region in the future. These findings are consistent with the results of Abdollahzadeh and Mirbargkar [14], Mosusavi Zadeh et al. [13].

The fourth important factor in attracting domestic and foreign investment is economic policies. In this case, the government and policymakers play an important role. For this, the public budget must be allocated and the liberalization and privatization of the region must be done more quickly. Meanwhile, the development of relations with the public sector can also be considered for the development of the Amirabad port. To do this, the managers of this region must make more efforts. At the same time, the government can consider different resources and budgets for these sectors. These findings are consistent with the results of research by Abdollahzadeh and Mirbargkar [14] and Mosusavi Zadeh et al. [13]. The fifth factor influencing the attraction of domestic and foreign investments in the Amirabad region of Behshahr is laws and regulations. Policymakers and legal entities operating in the international arena play an important role in this area. In order to do this, the transparency of the laws must be effective in providing the services, the security and the guarantee of the laws, and the financial incentives in the laws and regulations. Therefore, to do this, policymakers and managers in these areas should strive to provide legal requirements that will facilitate trade in the area. These findings are consistent with the results Abdollahzadeh and Mirbargkar [14], and Mosusavi Zadeh et al. [13].

Finally, the last factor in attracting domestic and foreign investment is location. It seems that the reason for selecting this variable as the last priority from the respondents' point of view can be considered in a

suitable place in the Amirabad region of Behshahr. The availability of natural resources, easy access to the region, and access to cheap labor are all indicators that exist in this region, and therefore, the basic infrastructure of the region is ready. These findings are consistent with the results of Aggarwal [8].

6 | Conclusion and Future Direction

In this research, a decision-making method for free trade zones was presented. Also, a complete analysis of the effectiveness of each foreign investment indicator in these types of regions was presented. This research can be raised as a basis for the sustainable development of free trade zones. The results of this research can be useful for both theorists and academics as well as for activists in the field of management. Therefore, the following suggestions are made:

1. It is suggested that the managers of Amirabad Free Zone try to expand the infrastructure of the region, including airports, railways, transportation routes, in order to provide the main facilities for the growth of the region. In addition, the use of modern ports, accommodation for merchants, multi-star hotels, and strong internet networks are among these factors.
2. It is suggested that the managers of free zones choose appropriate laws and regulations in order to improve trade in this zone. Transparency of laws, security, and guarantee of laws, and financial incentives in-laws and regulations can be among these issues.
3. It is suggested that the management of free zones be entrusted to experienced and highly educated people. The use of objective and efficient management, management systems, and shaping and marketing based on global standards are among these factors and solutions.
4. It is suggested that the government consider better conditions for free zones. Meanwhile, the governorate and managers, policymakers, and activists of the Behshahr region can also be involved in this sector. Allocation of public funds, liberalization, and privatization or development of relations with the public sector are among these strategies.
5. It is suggested that the managers of Amirabad port of Behshahr use strategic and codified planning in order to improve the future situation of the region. To do this, they can use academics and scientists to identify their strengths and weaknesses and take advantage of environmental opportunities to develop the region.
6. It is suggested that regional managers use the place where Amirabad is located with proper planning. Creating tourist areas and easy access using different ways can be among these cases.

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