RESEARCH ARTICLE

HUMAN RESOURCE STRATEGIES WITH COMBINED BSC APPROACH AND FUZZY LOGIC IN SMALL AND MEDIOCRE INDUSTRIES OF KHUZESTAN PROVINCE

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ARTICLE INFO	ABSTRACT
	In this paper, human resources strategies are examined with the combination of BSC and fuzzy logic in the small and mediocre industries of Khuzestan province. The statistical population in the qualitative section includes experts (managers with 10 years' experience of management) and a small number of managers and deputies of small and medium sized companies in Ahwaz. By Using Cochran's formula, 384 people were selected as a statistical sample and they were selected randomly. The data gathering tool was a researcher-made questionnaire whose content validity was verified and reviewed by five experts and professors. The reliability of the questionnaire was also evaluated by Cronbach's alpha test, which shows that the alpha coefficient is more than 0.7, so the questionnaire has an appropriate reliability. Data analysis was done in the qualitative section by using the theme analysis method. Also, in the quantitative part, the data of the research was analyzed by using SWOT analysis and fuzzy logic method. In this research, weaknesses and strengths were identified and analyzed in Khuzestan Province for small and medium-sized industries. Identified components and indicators were ranked based on their significance and their role in the development of industries in the province and by the fuzzy method they were ranked. Finally, the suggestions are presented based on the results of the data analysis.

INTRODUCTION

The thinkers have proposed a rigorous and precise set of new approaches for achieving and maintaining competitiveness in a flustered world. In general, offers and equipment can be classified as organizational changes (Goliard *et al.*, 1995). Anderson *et al.* (2007) investigated the impact of strategic HRM practices on the financial performance of some companies in Australia. The results of this study showed that strategic coordination of human resources activities with goals and strategies of business affects corporate financial performance. In other words, if human resources are designed and implemented in line with the long-term corporate goals of the company, it will bring about synergy between the different parts of the organization and will result in significant improvement in the financial performance of the company. Kato (2008) conducted a research entitled Measuring the Impact of HRM on Organizational Performance. In this study, using data from Greek manufacturing companies, the impact of human resources management on organizational performance has been investigated. The results showed that there is a meaningful relationship between human resource management and performance of the companies. The more powerful the management of human resources will be, the better the performance of organizations will be done.

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In 2008, Cheng and Fang (2008), a study titled a model for discovering the mystery of the relationship between the organizations's minimizing strategy and Performance of the company. The results showed that there are some general and adequate issues in formulating human resources strategies that allow us to create a public process that is useful for directing managers' thoughts in this field, including the management of selecting, promoting, and locating human resources. Organizations, inside and outside the organization, evaluating staff performance within the organization, rewards for adequate reimbursement of services, and motivational support for staff at all levels, employee development to enhance skills, knowledge and abilities, relationships And the voice of the staff in order to establish a collaborative atmosphere among the managers. Wiganjue *et al.* (2012) research Conducted on the relationship between strategic HR management and the performance of companies in Kenya. Here we consider the development of a conceptual framework to examine the relationship between strategic HR management, competitive strategies and company performance. The results of the research indicate that strategic and human resources management, along with appropriate competitive strategies, will provide a competitive advantage for the company and improve the performance of the organization. Here, the implementation of the proposed framework has not been addressed. And Research shows that there are no indications in Iran that changes in the content, philosophy and human resources management functions which are available.

However, by the year 1301, when the country's first recruitment law was ratified, there were no fundamentals, criteria and scientific methods that were in the interest of the state-owned organizations. The role of human resource management in Iran has not undergone major changes, and the traditional human resources management has been emphasized in Iran. In the present study, human resources strategies with a combination of BSC and fuzzy logic in the small and medium industries of Khuzestan province are examined. The use of human resource management in Iranian organizations has also not been a common practice, and has become common place in the West in the mid-1980s, and has been limited to a number of Iran's leading industrial organizations (oil, petrochemicals and fuels) over the last decade.

Tayyeb believes that human resource management in Iran is the same as the management of personnel that has been hugely occupied by local employment and occupation, and the political considerations behind it are superior to that of work. Recent findings about human resources management also suggest that human resource management in the Iranian institutions, especially in the public sector, is still part of the personnel management process. An expert on the effective factors of human resource transfer from the West to Iran and stated that it has been firmly established.

Statement of the problem

Schuler and Jackson divided the stages of human resource strategic management development into two stages, the first step is transferring personnel management into traditional human resources management and the second step: shifting from traditional human resource management to human resource strategy development. It provides a coherent theoretical framework for human resource management and claims that this framework can provide a framework for strategic coherence of policies and HRM (human resource management) actions and organizational strategies that enhance employee commitment, quality and More flexibility in human resources, and thus ensure the effectiveness and organizational success.

The writers' works all confirm that the establishment and implementation of a strategic HRM approach has been able to create competitive advantage for organizations and lead to better performance and added value and help implementation of comprehensive quality schemes. Despite the profound changes that have emerged in the philosophy and approach of human resources management in the West, the role of HRM in Iran has not undergone main changes and continues to emphasize the traditional responsibilities of personnel management in Iran. It can be said that knowledge of human resources management has been well advanced at the advanced level in academic circles. Unfortunately, there are still gaps in the practical or applied field for social and cultural reasons, and there is little research that illustrates the current status of human resources management strategies in the small and medium industries. The importance and urgency of the subject of the study, on the other hand the importance and necessity of strategic management of human resources and on the other hand the role of strategic management of human resources in human capital in education depends on the country.

Basic governing equation

Statistical population

The statistical population is a collection of individuals or units that have at least one mutual trait. A common trait is an attribute that is mutual among all the elements of a common statistical society and distinguishes the statistical community from other societies (Azar, Momani, 2004). statistical population in this research are small and mediocre industries in Khuzestan province. In other words, in this research, the statistical society is defined in two parts: quantitative and qualitative. In the qualitative section, experts' comments have been used. The experts in this research are managers of small and medium-sized companies in Ahwaz which have the following characteristics: with 10 years' experience of management of small and mediocre industries. Having master degree, with 5 years' experience of managing HR department in manufacturing companies, In the part of the managers, all small and medium-size manufacturing companies in Ahwaz are considered as the statistical community. The Cochran formula has been used to determine the sample size.

Data analyzing method

Descriptive Statistics

In this research, descriptive statistics were used to represent demographic information. For this purpose, demographic information is usually represented by circular diagrams using frequency tables and bar graphs. In this research, descriptive statistics were used to represent demographic information. For this purpose, demographic information is usually represented by circular diagrams using frequency tables and bar graphs. Inferential statistics. In this section, the foundation data theorizing is used to examine the weaknesses and strengths and identify human resources strategies. Fundamental theorizing of data is a research method for social sciences, developed by two American sociologists, Glycerol and Strauss. This method is an inductive and exploratory research methodology in which the researcher formulates theory instead of testing existing theories. This theory is organized in a regular manner and is based on real data. This method is one of the most important qualitative methods and, as Charma notes, the fundamental theory of data in the 1970s, in contrast to the dominant view that quantitative studies were, the only form of systematic scientific research and critical point in the history of science Social is a "qualitative revolution," and stood at the forefront of duty. Perhaps, if the capabilities of this method were not exist, today we could not see the prosperity and prosperity of qualitative research. The theory of the foundation data is the discovery of theory in social science research based on systematic data collection to reach a stage of cognition of the subject matter that enables us to construct a theory based on real data compare with existing theories. Therefore, in order to answer the research questions, the qualitative method of data theorization of the foundation data is used.

The process of doing this is that in the first step, data is sampled and collected. The data collected by the database theorist to describe the processes includes many types of qualitative data; Including observations, interviews, documents and information banks, memoirs of respondents and journals, and researcher's own reflections. The criterion for judging is

the time to stop the theoretical sampling, the theoretical adequacy, the categories, or the theory. The next step is the data encoding. Encoding means assigning the closest concept to the smallest component with the meaning of each section of the data collected. The codification takes place in three steps. Open encoding, axial encoding, selective encoding. In open encoding, the analyst deals with the creation of their categories and their characteristics, and then attempts to determine how the categories change over the specified dimensions. In axial encoding, the categories are systematically improved and linked to subcategories, and are selectively encoded in the process of integrating and improving categories. The next step is writing notes. At this stage, the researcher simultaneously collects data continuously to record their thoughts and interpret their interaction with the data. The tickets should be marked with a date and a title so that the researcher does not face many tickets. Notes play an important role in the advancement of research, and experience has shown that the continuity in the preparation of these notes plays a significant role in the success of the research. Then, in order to complete the strategy map by using the patterns provided by Kaplan and Norton in the Strategy Map, and by examining the causal relationships needed to implement each strategy, the strategies in each of the scenarios are in complete form. Each of the strategies is ranked based on relative importance with the help of fuzzy logic by using fuzzy multi-index decision making techniques (FMADM) to properly allocate resources to each strategy.

Fuzzy logic

The concept of uncertainty

Understanding and concentrating on "science and art of decision making" is one of the most important prerequisites for effective studies and research. Undoubtedly, the ultimate goal of such research is achieving a deeper and better understanding of the implementation of actions with one another and even the implementation of actions with "non-action". The actions that ultimately are developed and implemented in the form of clear and coherent plans and programs should, in principle, be identified, evaluated and selected on the basis of a systematic, scientific and valid methodology. Although sometimes along with terms and concepts such as decision making and planning, terms such as "under uncertainty conditions" are added, it must be acknowledged that decision making and planning in environments full of peacefulness, stagnation, and complete certainty, if not to say completely nonsense, it's certainly not realistic. The classification of decision-making in terms of confidence level to the results of different decision making, which include: 1. Decisions under full assurance: When the decision maker decides with complete certainty that the outcome or results of any possible contingency will occur, it will be in complete confidence in the decision-making process. 1. Decision-making in risky situations: When the decision maker does not fully know what the outcome of each one is, but knows the likelihood of occurrence, decides under risky conditions. 1. Decisions in conditions of uncertainty: When the decision maker does not know the probability of occurrence of the results of possible bargaining, he decides in conditions of uncertainty.

Fuzzy logic

The fuzzy logic is "Arguments with Fuzzy Collections". In fuzzy logic instead of two-value, we will have a range of

values in the closed interval of zero and one. Uncertainty can be displayed with this spectrum. In 1965, the theory of the fuzzy collection was proposed by lotf Ali Zade for the unknown problems and uncertainty used in modeling for complex systems that can be controlled by humans but very difficult and provide a technical tool for the evaluation of phenomena (Zade, 1965). Implementation of calculations with fuzzy numbers is very time- consuming and complex due to their specific structure. In order to facilitate and apply fuzzy numbers, special numbers are used in calculations. Here, due to the simplicity of the calculus and the applicability of fuzzy triangles, it has been used. A triangular fuzzy number can be represented by an ordered triplex (l, μ, u) as follows:
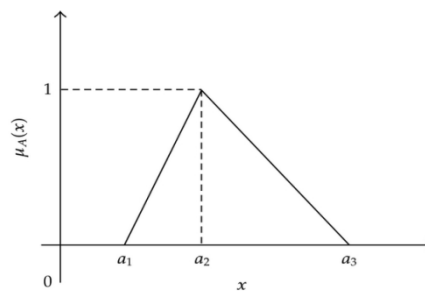
Figure 1. Shows triangular fuzzy numbers

Fuzzy collection

Fuzzy sets are the generalization of the classical theory of collections that are used in fuzzy logic. The theory of these sets was invented by Lotf Ali Askarzadeh. The fuzzy set is defined by the membership function, which is an image of the interval [0 and one]. Each member has membership degrees. A fuzzy complex was created of generalization of the theory of classical collections. In the theory of classical collections, membership in a set is defined as binary sentences based on the binary condition that a member or set belongs to or does not belong to any complex. While in fuzzy theory, the relative degrees of membership of the members are allowed in the collection. In classical theory, a set of objects, individuals, or phenomena that have the same property. For example, complex A shows a single-digit individual number.

A= {1, 3, 5, 7, 9}

1, 3, 5, 7, and 9 are the members of A, which has a membership degree of this set, and the other numbers that do not have zero membership degrees. In the theory of fuzzy complex, each member has a membership degree (a number between 0 and 1). The fuzzy set A of the reference U is shown in pairs as follows:

$$\tilde{A} = \{(X, \mu_{\tilde{A}}(X) \mid X \in \bigcup \}$$

A fuzzy set is discrete if:

$$\tilde{A} = \sum_{i=1}^{n} \frac{\mu \tilde{A}(x_i)}{x_i}$$

A Fuzzy set is continuous if:

$$\tilde{A} = \int \frac{\mu \tilde{A}(x)}{x}$$

A normal fuzzy- interval set is called in which members have at least one X with a membership of 1.

SWOT matrix

Given that we intend to develop human resource strategies by using the SWOT matrix, it is important to get acquainted with this valuable tool. This method, also known as SWAT in Persian, is one of the strategic planning tools used to assess internal and external status of the organization's. The first letters of strength, weakness are SWOT in English. In addition to strategic planning, this approach is generally used to analyze the status of organizations. In fact, this analysis should be an effective tool for identifying the environmental conditions and internal capabilities of the organization, the foundation of this tool is effective in strategic management as well as marketing. This analysis, in addition to the SWOT, has also been referred to as TOWS in some texts. This technique was first used in military systems, then in the management of industries and factories for the first time, as its content is known, and since 1990 it has entered into management and programming systems. The most important feature of SWAT is that without the need for quantitative analysis and mathematical calculations, it is possible to analyze data and formulate a payment strategy, while other methods and analyzes require little statistics and information, as well as complex mathematical formulas. This technique allows the use of findings and information through the use of qualitative methods. To determine strategies, firstly, we must examine the strengths, weaknesses, by looking at the interior and external factors, based on which, using the SWOT matrix, the strategies of the organization are extracted. Table 3-1 shows an overview of a SWOT matrix.

Strategy S: This strategy is about the internal state of the organization and evaluates its positive points (strengths). This strategy can create a collaborative mode in the organization. Every company wants to be in this position so that it can maximize the use of opportunities by exploiting its capabilities. (Gatherings and presenting successful experiences, as well as designing training courses such as knowledge management, learning organizations, etc. can be useful in this area). Strategy W: This strategy addresses the internal status of the organization and evaluates its weaknesses. The second goal is reducing the weaknesses and increasing opportunities. Sometimes firms cannot take advantage of the opportunities because of their weaknesses. Therefore, designing training courses to eliminate weaknesses can empower the company to take advantage of opportunities. Strategy O: This strategy is related to the external status of the organization and evaluates its positive points (opportunities) in relation to the outside. The strategy is based on the company's ability to deal with threats, aiming at enhancing existing capabilities and reducing threats by designing training courses.

Strategy T: This strategy is related to the external status of the organization and evaluates the negative points (threats) in relation to the outside. The goal of this strategy is reducing the threats as much as possible. A company that is facing bankruptcy can use various strategies such as disorganization, mergers and survival efforts by holding courses such as strategic management, etc.

SWOT analysis

After identifying the important factors of the strengths, weaknesses, it is necessary to analyze the coherent, key factors and components in each of the four sections of the BS and the

Table 1. Is an example of a SWOT matrix

	opportunities	threats
Strengths S	SO	ST
weaknesses W	WO	WT

Table 2. Internal factor assessment matrix (IFAS1)

Name of factors	Title	Weights	Ranking	Rating final point
S1	Ability to more comfortable and faster staff training	0.055	2	0.11
S2	Ease of organization and deployment of various systems	0.095	3	0.285
S3	attract experienced people and experts	0.043	4	0.172
S4	Direct contact with staff in order to create motivation	0.089	2	0.178
S5	Proper organizational structure	0.089	2	0.178
S6	The existence of specialized organizations and associations such as the engineering organization	0.045	3	0.135
S7	Existence of potential capability in the development of exploration, processing and production technologies in various industries	0.078	4	0.312
S8	The presence of university specialist, geosciences laboratories and equipment for activities in various industrial sectors	0.085	4	0.34
S9	Strengthening the non-governmental sector	0.051	2	0.102
S10	The existence of large enterprises with the potential of regional and international activities in the field of manufacturing industries	0.067	2	0.134
S11	Institutions in the field of development organization and covering risks (insurance activities)	0.098	3	0.294
S12	Institutions in the field of development organization and covering risks (insurance activities)	0.064	3	0.192
S13	Existence of powerful managers in the province	0.037	2	0.074
S14	free trade zones in the province	0.049	2	0.098
S15	tax incentives in the province	0.055	2	0.11
total		1	-	2.714

strategic SWOT-analysis approach. According to the nature of the studies, the most appropriate analysis technique, SWOT is a qualitative-analytical technique. The main factors in the strengths section derived from the qualitative section and the results of the interviews are summarized in Table 4-5. After reviewing and analyzing Delphi's views, experts' opinions were highlighted on the strengths, weaknesses, worn out texture, and their coefficients. In this section, the factors of internal factors were calculated and determined by the capabilities and potentialities of the text in the tables of evaluation of the internal and external factors of the ruler. The importance and weight of each of the strengths and weaknesses was determined and evaluated by using expert opinion on criteria (by applying experts' opinions). In the table below, the average scores for all scorecards are considered for each of the criteria or strengths and weaknesses. The rank of agents is determined by a very important, important, insignificant and unimportant spectrum.

factor is obtained based on these coefficients, one can rank the weaknesses and strengths. This work was extracted from the final results of the factors after the data entry in Excel Express and the calculation of the hierarchical model. The results are presented in Table (3). Table 3. Comparison of factors in the strengths group. The results of SWOT's final assessment indicate that the presence of strengths, the presence of academic staff, geosciences laboratories and equipment for operating in various industrial sectors (final weight of 0.34), the existence of potential capabilities in the development of exploration technology, processing And production in various industries (final weight of 0.312), institutionalization in the field of development organization and coverage of risks (insurance activities) (final weight of 0.294), ease of organization and deployment of different systems (final weight of 0.285) , And the existence of tax incentives in the province (final weight of 0.192), respectively, are the most important strengths of Khuzestan's businesses.

Table 2. Internal factors evaluation matrix (weaknesses) (IFAS1)

Name of factor	Title	Weight	Ranking	Rating final point
W1	Lack of new expert	0.068	4	0.272
W2	Failure to comply with labor and health regulations	0.042	4	0.168
W3	Weaknesses of management	0.106	3	0.318
W4	Not planning and determining the goals and mission of the organization	0.043	2	0.086
W5	lack of using academic research	0.068	4	0.272
W6	Lack of job security	0.092	3	0.276
W7	High amount of bank profit	0.089	2	0.178
W8	Lack of strong corporate and professional organizations	0.081	4	0.324
W9	Lack of effective and efficient Research & Development units	0.039	2	0.078
W10	Lack of industries development	0.042	3	0.126
W11	The dominant influence of the public sector on the ownership and management of firms	0.078	4	0.312
W12	A small contribution of specialist force in the combination of human resources	0.068	4	0.272
W13	Lack of capital of the specialized bank of industry, mine and banking system capacities	0.068	2	0.136
W14	The weakness of government policy making and planning	0.048	2	0.096
W15	lack of Law and related regulations	0.068	3	0.204
sum		1	-	3.118

Table 3. Comparison of factors in the strengths group

	S1	S2	S3	S4	S5	S6	S7	S8
S1	1.00 1.00 1.00	1.05 1.53 2.09	0.76 1.03 1.43	0.58 0.81 1.20	0.88 1.27 1.76	1.05 1.53 2.09	1.05 1.53 2.09	0.88 1.27 1.76
S2	0.48 0.65 0.95	1.00 1.00 1.00	0.88 1.27 1.76	0.83 1.23 1.72	0.88 1.27 1.76	1.05 1.53 2.09	1.05 1.53 2.09	0.88 1.27 1.76
S3	0.70 0.97 1.32	0.57 0.79 1.13	1.00 1.00 1.00	1.22 1.77 2.34	0.88 1.27 1.76	1.05 1.53 2.09	1.05 1.53 2.09	0.57 0.74 1.07
S4	0.83 1.23 1.72	0.58 0.81 1.20	0.43 0.56 0.82	1.00 1.00 1.00	1.43 2.09 2.78	1.05 1.53 2.09	1.05 1.53 2.09	0.35 0.44 0.62
S5	0.57 0.79 1.13	0.57 0.79 1.13	0.57 0.79 1.13	0.36 0.48 0.70	1.00 1.00 1.00	1.05 1.53 2.09	1.05 1.53 2.09	0.79 1.41 2.80
S6	0.48 0.65 0.95	0.48 0.65 0.95	0.48 0.65 0.95	0.48 0.65 0.95	0.48 0.65 0.95	1.00 1.00 1.00	1.05 1.53 2.09	0.35 0.44 0.62
S7	0.48 0.65 0.95	0.48 0.65 0.95	0.48 0.65 0.95	0.48 0.65 0.95	0.48 0.65 0.95	0.48 0.65 0.95	1.00 1.00 1.00	1.48 2.09 2.78
S8	0.57 0.79 1.13	0.57 0.79 1.13	0.93 1.35 1.90	1.60 2.20 2.85	0.36 0.71 1.41	1.60 2.25 2.83	0.36 0.48 0.70	1.00 1.00 1.00
S9	0.93 1.35 1.90	1.60 2.25 2.83	0.22 0.35 0.45	0.57 0.79 1.13	0.19 0.34 0.41	1.60 2.25 2.83	1.60 2.25 2.83	0.57 0.79 1.13
S10	0.26 0.39 0.58	1.05 1.53 2.09	0.76 1.03 1.43	0.58 0.81 1.20	0.88 1.27 1.76	1.05 1.53 2.09	2.09 0.88 1.27	1.76 1.60 0.39
S11	0.48 0.65 0.95	0.26 0.47 0.38	0.88 1.27 1.76	0.83 1.23 1.72	0.88 1.27 1.76	1.05 1.53 2.09	2.09 0.88 1.27	1.76 1.60 0.39
S12	0.70 0.97 1.32	0.57 0.79 1.13	0.26 0.48 0.96	1.22 1.77 2.34	0.88 1.27 1.76	1.05 1.53 2.09	2.09 0.53 0.74	1.07 1.60 0.04
S13	0.83 1.23 1.72	0.58 0.81 1.20	0.43 0.56 0.82	0.33 0.59 0.54	1.43 2.09 2.78	1.05 1.53 2.09	2.09 0.35 0.44	0.62 1.60 0.1

After calculating the factors and their coefficients by using the weight and importance of each of these factors in the strengths and weaknesses, the final score or final coefficient of each

In weaknesses, studies and research findings show that the lack of strong professional organizations (final weight of 0.324), management weakness (final weight of 0.318), general

Table 4. Comparison of factors in the group of weaknesses

	S9			S10			S11			S12			S13			S14			S15		
S1	0.53	0.74	1.07	0.75	1.24	0.53	1.01	1.57	0.53	1.01	1.57	0.36	0.75	1.24	0.47	1.27	1.76	0.75	0.38	0.78	0.49
S2	0.35	0.44	0.62	0.75	1.24	0.53	1.01	1.57	0.53	1.01	1.57	0.36	0.75	1.24	0.26	1.27	1.76	0.75	0.24	0.78	0.49
S3	2.21	3.12	3.97	0.75	1.24	0.53	1.01	1.57	0.53	1.01	1.57	0.01	0.22	0.55	1.69	2.60	3.45	0.23	0.72	0.26	0.24
S4	0.88	1.27	1.76	1.57	2.26	0.53	1.01	1.57	0.53	1.01	1.57	0.54	0.68	0.10	0.36	0.75	1.24	1.05	1.74	0.34	0.65
S5	1.65	2.95	5.13	0.48	0.48	0.53	1.01	1.57	0.53	1.01	1.57	0.19	0.89	2.28	1.13	2.43	2.09	0.88	1.27	1.76	0.38
S6	0.35	0.44	0.62	0.13	0.65	0.95	1.00	0.48	0.53	1.01	1.57	0.68	0.65	0.95	1.00	1.27	2.09	0.88	1.27	1.76	0.75
S7	0.35	0.44	0.62	0.13	0.97	1.32	0.57	0.65	0.95	1.00	0.48	0.91	0.97	1.32	0.57	0.74	2.09	0.53	0.74	1.07	0.18
S8	0.88	1.27	1.76	0.19	1.23	1.72	0.58	0.97	1.32	0.57	0.18	0.48	1.23	1.72	0.58	0.88	1.27	2.09	0.88	1.27	1.76
S9	1.00	1.00	1.00	0.65	0.09	1.08	1.73	1.23	1.72	0.58	2.31	0.05	0.27	0.61	2.09	0.88	1.27	2.09	0.88	1.27	1.76
S10	0.78	1.27	1.11	1.00	1.00	1.00	1.05	1.53	2.09	0.76	1.03	1.43	0.58	0.81	2.09	0.53	0.74	2.09	0.53	0.74	1.07
S11	0.78	1.27	1.11	0.48	0.65	0.95	1.00	1.00	1.00	0.88	1.27	1.76	0.83	1.23	2.09	0.35	0.44	2.09	0.35	0.44	0.62
S12	0.65	0.95	1.00	0.70	0.97	1.32	0.57	0.79	1.13	1.00	1.00	1.00	1.22	1.77	2.34	0.88	1.27	1.76	1.05	1.53	2.09
S13	0.97	1.32	0.57	0.83	1.23	1.72	0.58	0.81	1.20	0.43	0.56	0.82	1.00	1.00	1.00	1.43	2.09	2.78	1.05	1.53	2.09
S14	1.23	1.72	0.58	0.57	0.79	1.13	0.57	0.79	1.13	0.57	0.79	1.13	0.36	0.48	0.70	1.00	1.00	1.00	1.05	1.53	2.09
S15	0.28	0.13	1.11	0.48	0.65	0.95	0.48	0.65	0.95	0.48	0.65	0.95	0.48	0.65	0.95	0.48	0.65	0.95	1.00	1.00	1.00

Table 5. Calculation of the final score of internal factors based on the model (SWTO-AHP)

	W1			W2			W3			W4			W5			W6			W7			W8		
W1	1.00	1.00	1.00	0.87	1.35	1.91	0.58	0.85	1.25	0.40	0.63	1.02	0.70	1.09	1.58	0.87	1.35	1.91	0.87	1.35	1.91	0.70	1.09	1.58
W2	0.30	0.47	0.77	1.00	1.00	1.00	0.70	1.09	1.58	0.65	1.05	1.54	0.70	1.09	1.58	0.87	1.35	1.91	0.87	1.35	1.91	0.70	1.09	1.58
W3	0.52	0.79	1.14	0.39	0.61	0.95	1.00	1.00	1.00	1.04	1.59	2.16	0.70	1.09	1.58	0.87	1.35	1.91	0.87	1.35	1.91	0.35	0.56	0.89
W4	0.65	1.05	1.54	0.40	0.63	1.02	0.25	0.38	0.64	1.00	1.00	1.00	1.25	1.91	2.60	0.87	1.35	1.91	0.87	1.35	1.91	0.17	0.26	0.44
W5	0.39	0.61	0.95	0.39	0.61	0.95	0.39	0.61	0.95	0.18	0.30	0.52	1.00	1.00	1.00	0.87	1.35	1.91	0.87	1.35	1.91	0.53	1.23	2.62
W6	0.30	0.47	0.77	0.30	0.47	0.77	0.30	0.47	0.77	0.30	0.47	0.77	0.30	0.47	0.77	1.00	1.00	1.00	0.87	1.35	1.91	0.17	0.26	0.44
W7	0.30	0.47	0.77	0.30	0.47	0.77	0.30	0.47	0.77	0.30	0.47	0.77	0.30	0.47	0.77	0.30	0.47	0.77	1.00	1.00	1.00	1.25	1.91	2.60
W8	0.39	0.61	0.95	0.39	0.61	0.95	0.75	1.17	1.72	1.42	2.07	2.65	0.18	0.53	1.23	1.42	2.07	2.65	0.18	0.30	0.52	1.00	1.00	1.00
W9	0.75	1.17	1.72	1.42	2.07	2.65	0.07	0.14	0.27	0.39	0.61	0.95	0.01	0.16	0.43	1.42	2.07	2.65	1.42	2.07	2.65	0.39	0.61	0.95
W10	0.08	0.21	0.40	0.87	1.35	1.91	0.58	0.85	1.25	0.40	0.63	1.02	0.70	1.09	1.58	0.87	1.35	1.91	1.91	0.70	0.75	1.17	1.72	1.42
W11	0.30	0.47	0.77	0.08	0.29	0.20	0.70	1.09	1.58	0.65	1.05	1.54	0.70	1.09	1.58	0.87	1.35	1.91	1.91	0.70	0.07	0.14	0.27	0.39
W12	0.52	0.79	1.14	0.39	0.61	0.95	0.08	0.30	0.78	1.04	1.59	2.16	0.70	1.09	1.58	0.87	1.35	1.91	1.91	0.35	0.75	1.17	1.72	1.42
W13	0.65	1.05	1.54	0.40	0.63	1.02	0.25	0.38	0.64	0.21	0.36	0.34	1.25	1.91	2.60	0.87	1.35	1.91	1.91	0.17	0.07	0.14	0.27	0.39
W14	0.39	0.61	0.95	0.39	0.61	0.95	0.39	0.61	0.95	0.18	0.30	0.52	0.25	0.24	0.40	0.87	1.35	1.91	1.91	0.75	0.58	0.85	1.25	0.40
W15	0.30	0.47	0.77	0.30	0.47	0.77	0.30	0.47	0.77	0.30	0.47	0.77	0.30	0.47	0.77	0.36	0.38	0.17	1.91	0.17	0.26	0.44	1.42	0.25

Factor	modelAHP	ranking	factor	modelAHP	rating
S1	0.188	3	W1	0.143	13
S2	0. 125	18	W2	0.176	5
S3	0.086	23	W3	0.018	28
S4	0.134	16	W4	0.068	24
S5	0. 123	19	W5	0.118	21
S6	0.189	2	W6	0.158	9
S7	0. 197	1	W7	0.142	14
S8	0. 065	25	W8	0.163	8
S9	0. 138	15	W9	0.103	22
S10	0.172	6	W10	0.036	27
S11	0. 145	12	W11	0.126	17
S12	0. 156	10	W12	0.187	4
S13	0.057	26	W13	0.122	20
S14	0.012	30	W14	0.168	7
S15	0.148	11	W15	0.023	29

C. I = 0.02

domination of ownership and management of firms (The final weight of 0.312), the small contribution of the specialist force in the combination of human resources (final weight of 0.276) and the lack of expert use (final weights of 0.272) are the most important weaknesses. On the graph (1), it is observed that the strengths of S8, S7, S11 and S2 are identified and determined from the important strengths and weight of high importance among the identified strengths in Khuzestan province. The weight value of these points is clearly marked and separated from other points. Figure 2 also shows that W8, W3, W11 and W1 weaknesses are identified as important and important points of weakness among the identified weaknesses in Khuzestan province. The weight value of these points is clearly marked and separated from other points. This vulnerability is one of the most severe weaknesses identified in the region.
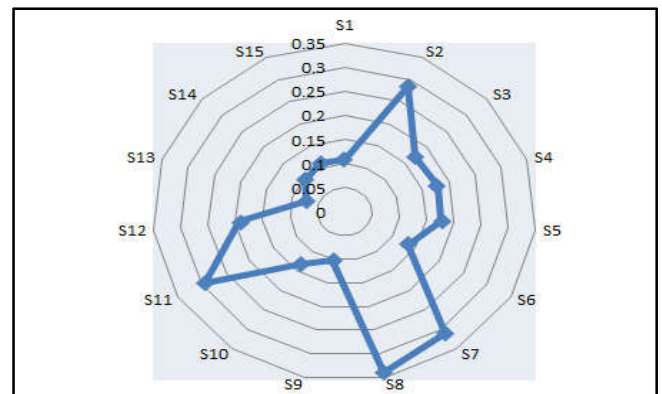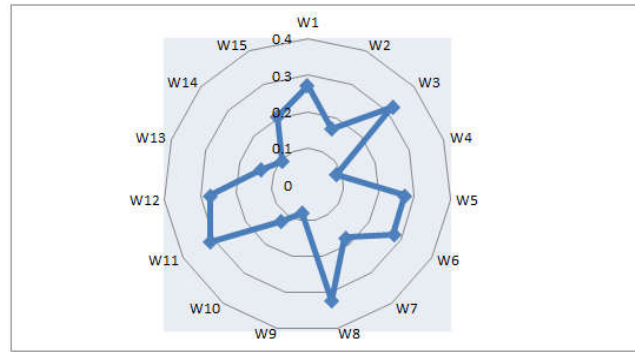

Figure 1. The final weight of each strength

Figure 2. The final weight of each of the weaknesses

Table 7. Calculation of the final score of internal factors based on the model (SWTO-AHP)

Factors	Modelahp	Ranking	Factor	Modelahp	Rating
O1	0.185	30	T1	0.066	29
O2	0.123	6	T2	0.095	3
O3	0.165	15	T3	0.177	21
O4	0.134	1	T4	0.121	23
O5	0.126	13	T5	0.068	26
O6	0.028	7	T6	0.098	5
O7	0.147	4	T7	0.128	18
O8	0.016	22	T8	0.167	2
O9	0.105	9	T9	0.023	12
O10	0.098	16	T10	0.023	10
O11	0.146	27	T11	0.038	8
O12	0.186	20	T12	0.084	19
O13	0.143	24	T13	0.068	28
O14	0.048	11	T14	0.125	25
O15	0.076	14	T15	0.023	17

C .I = 0.02

Conclusion

In this paper, human resources strategies with the combination of BSC and fuzzy logic in the small and medium industries of Khuzestan province were investigated. The process of globalization, the establishment of the WTO and the integration of global markets, rapid and fundamental technological advancements, new developments in the field of information technology, increasing rapid changes in consumption and demand patterns, clarification of environmental pollution controls and energy conservation, shortages. The high costs and resources they face are the challenges faced by businesses and industries in the field of business and economic activity, and their survival is subject to a proper and timely- decision about these changes. In the meantime, the process of globalization and expansion of consumer markets, as well as increasing the number of rivals and the intensity of competition, has led to the importance of such concepts as competitiveness.

This has led firms, industries and countries to enhance their competitiveness by identifying effective factors. Strive to compete and strengthen them. Many researchers have proposed theories and models for justifying and interpreting competitiveness and its factors. They have classified the factors that affect competitiveness and are presented in the form of models. These theories and models are also relatively diverse. The study of the views of various scholars shows that there is no single definition of competitiveness. But in general, competitiveness can be characterized by the capabilities that a business, industry, region, country has and can maintain, in order to compete in the international arena, it creates a high return on production factors and manpower in the situation is

relatively high. In other words, competitiveness is the ability to increase market share, profitability, value added growth and stay in a fair international competition for a long period of time. Competitiveness results from a combination of assets and processes. Assets are either fortunate (such as natural resources) or human-made (such as infrastructure), and processes that convert assets into economic benefits from sales to customers, and ultimately lead to competitiveness. This can be shown in the form shown in Fig. 1 as a global competitiveness formula. In the study of competitiveness, it is possible to look at the issue from another angle and these resources create competitiveness. The sources of competitiveness can be divided into three categories: technology, organization and human resources. The competitive advantage derived from human labor is more durable and more stable than other competitive advantages, and more time is needed for rivals to imitate these competitive advantages. Competitiveness is the capabilities of a business, industry, region, country, and they can maintain them in order to create a high return on production factors in the international competition and put their human resources in a relatively high position.

For the theories and models, a variety has been presented to justify and interpret the competitiveness and its classification, among which Porter Diamond model has particular importance. Based on this model, four main factors of internal factors, domestic demand, related industries and supporting industries, as well as strategy, structure and competition, have a direct impact on the competitiveness of countries as well as its various industries. In addition, the two factors of government and unpredictable events also indirectly affect competitiveness. Although this model is the basis of many

studies across the global and has attracted many researchers, it also has weaknesses, including lack of emphasis on international issues and global markets, as well as non-consideration. The shift in production factors through multinationals and foreign direct investment. In addition, the government in non-developed countries has a role beyond the indirect effect. The results of SWOT's final assessment indicate that the presence of strengths, the presence of academic staff, geosciences laboratories and equipment for operating in various industrial sectors (final weight of 0.34), the existence of potential capabilities in the development of exploration technology, processing And manufacturing in various industries (final weight of 312/0), institutionalization in the field of development organization and coverage of risks (insurance activities) (final weight of 294/0), ease of organization and deployment of different systems (final weight of 285/0) And the existence of tax incentives in the province (final weight of 192/0), respectively, are the most important strengths of the Khuzestan province's businesses Fast. In weaknesses, studies and research findings show that the lack of strong professional and professional organizations (final weight of 324/0), management weakness (final weight of 318/0), general domination of ownership and management of firms (The final weight of 312/0), the small contribution of the specialist force in the combination of human resources (final weight of 276/0) and the lack of expert use (final weights of 272/0) are the most important weaknesses.

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