



Identifying and prioritizing effective strategies in strategic human resource planning using multi-fuzzy multi-criteria decision-making methods (Case study; Export Development Bank of Iran)

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Abstract

Many future studies in the field of human resource management reflect the fact that strategic advantage and sustainability in the competitive market will belong to organizations that can identify, attract and nurture the best human resource talents better than competitors and with the help of formulation. Maintain dynamic and business-oriented strategies. The present paper aims to identify and prioritize effective strategies in human resource planning in the Export Development Bank of Iran, using multi-fuzzy multi-criteria decision-making methods. The statistical population of this study included 23 experts (managers and experts) who were also considered as a sample size. Two researcher-made questionnaires based on the 9-point Likert scale were used to collect data. The method of this research was mixed and in terms of exploratory and developmental type and data analysis was done in the qualitative part based on the strategic planning matrix (SWOT) and a small part of the worst-best (BMW) fuzzy method. Findings showed that from the intersection of the two axes of internal factors evaluation matrix (1.68) and equivalent external factors (2.62) and SWOT matrix analysis, 19 identification strategies, among which the aggressive strategy of strengthening and establishing the system of recruitment and supply of human resources using methods Novin was identified as the first priority and this bank is facing a relative weakness in the field of human resources planning in a conservative position and in terms of the internal environment, and it is

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necessary to change the current situation towards an aggressive strategy. The purpose is to use the type of applied research.

Keywords: Strategic Planning of Human Resources, Multi-Fuzzy Criteria Decision Making, Export Development Bank of Iran.

1. Introduction

Undoubtedly, today human resources are the most valuable vital resource for cultivating and training the talents of employees by the smart managers of organizations and they make great efforts to draw a dynamic and strategic vision in the field of strengthening skills and flourishing capabilities and creativity of employees to make them human capital and strategic partner and as a competitive advantage to achieve high-performance [12]. Managers of dynamic organizations in the face of the pressures of the new competitive environment, while taking advantage of existing facilities and new methods of studying humanities and especially organizational behavior, try hard to fully develop the talent of their human resources and have a clear mission and desirable strategies and efficient organizational structures and appropriate job design to fully achieve their goals, which is to achieve capable and talented organizational human resources [23]. The employees of the organization if feel that they can be effective in developing a strategic plan and the organization's plan to improve the level of their capabilities, will work with better motivation and achieve the goals and achieve the vision of the organization and provide the organization. They also help in predicting the future needs of the organization and therefore the organizational issues experts attention to human resources as the most important organizational resource, has caused the various dimensions of this factor to be discussed over time [3]. The strategic planning of human resources is one of the most important issues of human resources and more than half of the organizations in developed countries has gained new capabilities in management using the results obtained from the development of human resource strategies. Therefore, in the new era, managers are expected to design, formulate and implement complex strategies by following the concepts of strategic and systematic thinking, and protect and support the spiritual capital of the organization in the form of intangible assets including the capabilities and competencies of human resources until organizational success is achieved [11]. Many domestic and foreign researchers in the field of human resource management believe that appropriate tools for strategic human resource management can play an important role in the success of organizational strategies. In addition, numerous studies on human resource planning and the role of strategic management in its design and development has pointed to the change in the thinking and practice of managers. This has changed the attitude and shifted attention to the role and position of strategic human resource management. According to Hendry and Pettigrew [15] change in attitude toward strategic human resource management as one of the main organizational issues in the 1980s, has been the source of many changes in the field of strategic human resource management in organizations.

In other words, these studies showed that human resources can be considered as a strategic partner and strategic resource for organizations as part of a macro plan in organizational strategic planning, thus Macro orientation in the further formulation of long-term and strategic planning in the field of human resources will have a strategic and futuristic nature for the organization [32].

Human resource planning provides managers with a decision-making framework on human resources based on the mission, strategic goals and financial resources of the organization. Human resource planning should account for the mission, vision, goals and strategies of the organization. Organizational goals are the focus of human resources strategy so that in any human resources program, the main goal should be to achieve organizational goals [33]. According to Bryson [9], just as

the military strategy is to win the war, strategic planning also follows the method of carrying out organizational missions. Strategic human resource planning is a kind of planning vision or philosophy to solve organizational problems and peripheral organization problems and a prominent feature of this type of planning is to orient and determine the future path for the whole organization and the necessary interaction and adaptation with unpredictable changes in the internal and external environment and its main purpose is to formulate and implement an effective strategy in the field of human resource planning with the aim of linking human resource policies and methods with the strategic goals and objectives of the organization [20].

The process of technological, social and economic changes in the domestic and foreign environment is one of the main factors that have led to a new approach in strategic human resource planning and is a necessity in government organizations, especially in the country's banking system. Thus, if organizations want to keep pace with these changes in order to maintain market share and competitive advantage, they must have a strategic and holistic approach and consider various requirements such as the selection and retention of human resources [24]. Although, in the performance evaluation report of state-owned banks in 2017, which was published by the Ministry of Economic Affairs and Finance, the performance (operational) rating of the Export Development Bank of Iran in the country's banking system was evaluated as successful and "good", it faces many human resources planning challenges due to the wave of human resources retirement for the next 8 years. This is more important when this specialized bank faces limitations in meeting new needs for human resources by supervisory laws and it is inevitable that due to the requirements and limitations of available capacities such as facilities and human resources, to identify strategies and factors affecting the strengthening and performance of employees such as attention to the effect of the internal environment or the external environment based on Articles of the law on the annexation of articles to the law regulating part of the approved financial regulations of the government, approved on 11/16/2005, including Articles 40, 41 and 42, in the field of meeting new needs for human resources.

The paucity of research on the issue and the need for planning of human resources supply and its balance with the development activities of the bank in the future, as well as the presence of many challenges in implementing current policies and procedures of human resources in the queue and headquarters including development and supply of human resources, maintenance of specialized personnel, performance management and improvement as well as proportional compensation of services with a proper centralized approach instead of centralized equality, required identification of these important factors and effects while analyzing internal strengths and weaknesses and identifying opportunities and threats to the external environment such as macroeconomic variables or limitations arising from the macroeconomic policies of the banking industry to assist the senior managers of this bank to use the opportunities and overcome the challenges. Therefore, the current paper aims at answering the main question: **"What are the optimal strategies and effective dimensions in designing and explaining the strategic planning model of human resources in the Export Development Bank of Iran using multi-fuzzy criteria decision-making methods?"**

2. Theoretical foundations and research background

The 1980s began with significant changes in the structure of the world economy. In this decade, the world economic hub shifted from the United States to East Asia, especially Japan, and the business environment underwent rapid and successive changes in technological and economic factors. The condition of traditional strategic planning approaches designed for a relatively sustainable environment was no longer responsive, and subsequently in the 1990s strategic theorists returned to very different theories and questioned traditional approaches, e.g. Henry Mintzberg [18], by propos-

ing the distinction between analytical and synthetic processes or mental construction, denied the basis of strategic planning and stated that in principle, the planning process can not create strategy [31]. According to Robbins [27], human resource planning is the process by which an organization determines how many employees, with what expertise and skills, for what jobs and at what time it needs to achieve its goals. Today, companies have many strategic and operational tools, but there is still no clear theory or framework for integrating many of these tools. On the other hand, they want the tools of strategic planning and operations improvement to become a continuous system, but in practice, we see that the implementation of these tools is cross-sectional without the necessary exchange and coordination, and setting the strategy and the connection between strategy and operations must exist while it remains cross-sectional, variable and discrete, however, organizations can link strategy to operations using a systemic approach and with the help of strategy and operations management tools [13]. The rebirth of strategic planning refers to strategic thinking in organizations as strategic planning that merely requires rapid change in the face of more rapid environmental changes. Strategic planning is used in the case of facing analytical thinking processes and planning, while strategic thinking is used in the face of creativity and divergent thinking process. Ruivo et al. [36] in a study entitled "The relationship between human resource planning capabilities and value creation for employees and the moderating role of application and use of strategic human resource planning among employees of enterprises in several German countries "England and Portugal" showed that their results and findings showed that there is a direct and significant relationship between the outstanding capabilities of strategic human resource planning and its use and application with value creation among employees of economic enterprises in these countries. According to Armstrong [2] strategic human resource management provides the necessary coordination between the various activities of the organization, creating appropriate opportunities and preventing potential threats, and states a kind of strategic integration to create a compatibility between human resource strategy and organizational strategy as an undeniable necessity and the purpose of creating this strategic coordination is the homogeneity between the goals of human resource management and the goals of the organization [13]. Strategic human resource planning has functions or tasks that are implemented in organizations in order to provide appropriate and coordinated human resources to achieve the goals of the organization, and in fact, organizations can influence the skills, attitudes and behavior of employees appropriate to their job to achieve organizational goals [10]. Strategic human resource planning can be considered as a kind of vision or philosophy of planning to solve the organization problems related to the environment. A distinctive feature of this type of planning is the orientation and determination of the future path for the whole organization in relation to its external environment. Strategic human resource planning is a process aimed at establishing human resource goals to achieve organizational goals and policies through mobilization, development and maintenance of human resources [32]. In organizations that have understood the meaning of competition in today's world in a real sense, they have found that more success is in the effective use of human resources and today human resources are the most valuable factor of production and the most important capital of any organization and the main source of advantage. It is competitive and equips organizations with the basic capabilities and human resources, not as a source of cost but as valuable assets to gain a competitive advantage that should be like any other source for short-term and long-term planning. It took time and took into account the ability of individuals, the merits of individuals, creating motivation and finally cultivating them, which can achieve maximum productivity with the help of the most effective methods and tools. The process of technological, social and economic changes and transformations always faced in the internal and external environment of organizations include the main factors that have led to a new approach in strategic human resource planning. The organizations must have a comprehensive and strategic approach and consider

various requirements to be in line with these changes [22]. Mojibi et al. [19] examined business strategies and strategic orientation to map the future of human resource management systems using multi-fuzzy multi-criteria decision-making methods in one of the state-owned banks in Iran. They concluded that human resource strategies in terms of differentiation and cost leadership have little effect in this bank and it is better that policymakers adopt a forward-looking view by benefiting from new electronic technologies to provide clients with the unique services and take the necessary measures to reduce the cost of services and pay attention to internal resources instead of outsourcing contracts. Najib bin Musa et al. [38] in a study entitled "Effective application of the systematic model of strategic human resource planning in Tunisia" concluded that human resource planning can increase the creative and innovative capabilities of employees of organizations in this country and this The model is effective in developing the professional creativity of employees. Jenab et al. [16] conducted a study entitled "Investigate the Impact of Intelligent Enterprise Resource Planning System on the Operations of 14 American Companies Active in Intelligent Technology". The results showed that the use of intelligent human resource planning systems such as the mentioned intelligent system can improve the quality of executive operations in these companies and accelerate the response to market demand, increase efficiency in these companies and improve competition in the organization. Aslanian and Salehi Tadi [4] while developing a model for strategic human resource planning, which was outlined by identifying the effective factors and dimensions and preparing a comprehensive process of strategic human resource planning with a futuristic approach, achieved the important finding that successful strategic planning design and implementation of futuristic human resources requires the provision of favorable conditions and these conditions are referred to as prerequisites and necessities. Sayyed Javadin [29] designed and implemented a strategic human resource planning model to empower human resources in order to develop the quality of human resources and according to the position of human resources in the organization. The difference between the model designed in this study and other models in strategic human resources planning is the analysis of the external environment using the Ansoff model, the analysis of the internal environment using the Mintzberg model, the classification of human resources using the Boston Consulting Group model, and the presentation of appropriate strategies in the form of Hershey and Blanchard empowerment model.

Bamberger [7] while conducting research on "Presenting the most appropriate strategic model of human resources" presented an integrated model based on strategic reference points and considering the two main variables of quantity and quality control over labor process and product Labor force (domestic labor market or foreign labor market). The results of this study were to present four main strategies called paternal strategy, committed strategy, secondary strategy and contractual strategy to develop a comprehensive model of strategic human resource management. Poursadegh et al. [26], quoting Michael Armstrong [1], state that the human resources recruitment strategy ensures that the organization retains the employees it needs and uses them effectively and efficiently. Although relatively little research has been done on the exact effect of the HR subsystem on the effectiveness of the organization, researchers emphasize the need to adapt that strategy to the organization. Compared to traditional human resource management, human resource management emphasizes finding employees whose views and behaviors are more consistent with the views of managers, which carries the risk of the organization becoming a cohesive group of people. Gurel and Sari [14] conducted a study entitled "Presenting a human resource planning model and optimal human resource strategy in human resource consulting and infrastructure startup companies". The results of this study showed that with the development of strategic human resource management planning, leaders of startups have the opportunity to lead the development of human resource planning processes. Ebrahim Hasan Al Khajeh [39], conducted a review study approach to the impact of human resource management

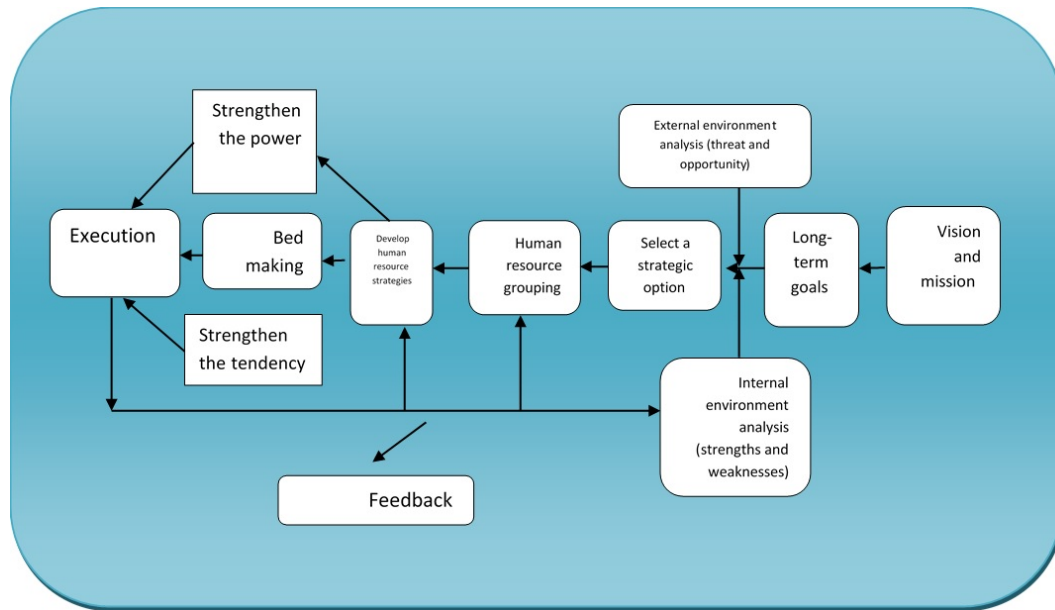


Figure 1: Model of strategic human resource planning [29]

strategies on organizational performance. They found that human resource strategies in an organization have a significant and direct effect on organizational capacities and culture, group norms, employee motivation and human resource strategies. Also, human resource strategies are effective on this general relationship including selection and employment, training and development of human resources service compensation and performance evaluation. Pourasadi et al. [25] in formulating human resource input strategies in the preventive police using internal and external factor matrices and Strength, Weakness, Opportunity, Threat (SWOT), have provided strategies for recruitment, selection and training. Bagheri [5] In research examined the alignment and overlap between strategic human resource planning and human resource strategies among stakeholders in Malaysian public organizations. The results of this study led to the identification of two models of value chain analysis and shareholder analysis among the mentioned organizations and showed how the strategy of the governing organizations increases as a result of the alignment of strategic human resource planning and human resource strategies. Therefore, the management of these public organizations should have appropriate planning for career development and talent management for human resources, which are an important part of strategic planning.

3. Research Methodology

This is an applied, mixed and exploratory approach paper so a combination of two methods "strategic planning matrix" and "fuzzy method" and "best-worst method, BWM" was used to analyze the data. The statistical population included 23 senior managers (board of directors and executive board), managers and heads of general departments, experts, Iranian human resources specialists (university in structures, etc.) who were selected as members of the panel of experts and mainly based on the experiences and knowledge of the researcher in the organization under study and according to the type of research method. All the statistical community was considered as a statistical sample. To assess the validity, first, the corrective opinion of the supervisors and advisors was received and then distributed among all members of the panel. The Cronbach's alpha of 9.6 is higher than 0.7 shows the reliability of the questionnaire. The method of data collection by

Table 1: Data collection tools and research questionnaires

No.	Title	Questionnaire objective	Validity and reliability	Source
1	SWOT questionnaire	Classification of indicators and determination of importance	Face validity, Cronbach's alpha coefficient test (9.6)	Researcher made
2	Fuzzy Delphi Questionnaire	Determining the weight of each index, final extraction of effective indices based on the best worst Method (BWM)	K-S test (all components had normal distribution and were higher than 0.05)	Researcher made

Table 2: Conversion table of verbal variables into triangular fuzzy numbers

Triangular fuzzy numbers	Rating	9- point Likert scale
(9,9,8)	9	Infinite (strength, weakness, opportunity, threat)
(9,8,7)	8	Very high (strength, weakness, opportunity, threat)
(6,7,8)	7	High (strength, weakness, opportunity, threat)
(5,6,7)	6	Relatively high (strength, weakness, opportunity, threat)
(4,5,6)	5	Medium (strength, weakness, opportunity, threat)
(5,4,3)	4	Low (strength, weakness, opportunity, threat)
(4,3,2)	3	Relatively low (strength, weakness, opportunity, threat)
(3,2,1)	2	Very low (strength, weakness, opportunity, threat)
(1,1,1)	1	Extremely low (strength, weakness, opportunity, threat)

this questionnaire was based on the 9-point Likert scale and the conversion of verbal variables into fuzzy triangular numbers, which are described in detail in the table below. Table 1 shows variables, sub-variables and indicators are discussed.

Step 1: Develop a strategic matrix of human resource planning: first, using related steps form a strategic planning matrix, and in the next step, then use fuzzy Delphi technique to weight the indicators using a combined approach of strategic planning matrix and technique. Fuzzy Delphi was used according to the following steps.

4. Fuzzy Delphi technique (BMW fuzzy method)

Kaufmann and Gupta, [17] introduced the application of the fuzzy Delphi technique for prediction. The structure of fuzzy triangular numbers is such that it is very suitable for prediction by the Delphi method (qualitative method of data collection in this study). Therefore, experts in human resources planning in the mentioned bank were asked to present their forecast based on the lowest, highest and most probable values for each of the indicators. In this case, there is no need to provide a definite value, and then the Delphi technique with the BWM fuzzy method was used to determine the importance of the indicators and sieve the most important identified indicators. In this method, the best and worst indicators and criteria are determined by the decision-maker and then a paired comparison between each with other indicators is done. The problem then becomes a linear programming problem. At this stage, the information was collected, categorized, and arranged according to a mixed research method. The 9-point Likert scale was used to fuzzy the triangular data according to the following table 2:

To aggregate the experts' predictions, the fuzzy average method based on the worst-best expert opinion was used and based on the 9-point Likert scale, triangular fuzzy numbers were displayed as (l, m, u) and then the experts' point of view was aggregated. In this method, the fuzzy mean for both views of an expert in the worst and best fuzzy mean was defined and then aggregated based on the following relationships:

1. Normalization of fuzzy values

$$A_{AVE} = \left(\frac{\sum l}{n}, \frac{\sum m}{n}, \frac{\sum u}{n} \right) \quad (4.1)$$

2. Calculating the upper and lower limits of normal values:

$$l_{\tilde{g}}^n = \frac{(l_{\tilde{U}}^t - \min l_{\tilde{g}}^t)}{\Delta_{\min}^{\max}} \quad (4.2)$$

$$m_{\tilde{U}}^n = \frac{(m_{\tilde{U}}^t - \min l_{\tilde{g}}^t)}{\Delta_{\min}^{\max}} \quad (4.3)$$

$$n_{\tilde{U}}^n = \frac{(n_{\tilde{U}}^t - \min l_{\tilde{g}}^t)}{\Delta_{\min}^{\max}} \quad (4.4)$$

3. Calculate the total normalized definite values:

Here, a set of triangular fuzzy numbers with the mean and minimum pessimistic approach of the expert l and the arithmetic mean of the expert opinion in the pessimistic mode of pessimism m and the fuzzy mean for the most and least optimistic pessimist u based on the expert with two different opinions optimism and pessimism are calculated:

$$l = \left(\min\{l\}, \left\{ \frac{\sum m}{n} \right\} \max\{ll\} \right) \quad (4.5)$$

$$F_{AGRU} = \left(\min\{l\}, \left\{ \frac{\sum m}{n} \right\} \max\{u\} \right) \quad (4.6)$$

In the normal and accepted state, considering that if there is a common zone between the two criteria l and h , that is, the gray zone (gray triangle in Figure 2).

In this part of the fuzzy Delphi stage, the average of triangular fuzzy numbers is used to de-fuzzy based on the following equations:

1. If the average of the worst criterion obtained is determined in the case of the best greater than or equal to the best criterion of the worst expert opinion, Equation (4.7) is used:

$$si = \frac{Lm + hm}{2} \quad (4.7)$$

2. If the mean of the criterion obtained in the optimistic state is greater than or equal to the best pessimistic criterion, and also if the criterion is greater than or equal to the worst optimistic state, and it is greater than or equal to the average criterion in the pessimistic state, Equation (4.8) is used:

$$si = \frac{(Lm * hm) - (hl * lm)}{(hm - hl) - (lm - lu)} \quad (4.8)$$

3. If the above relation is not established for each criterion, there is no consensus among the experts and necessarily the opinion of the experts in relation to the mentioned criterion should be taken again and the calculations should be done again.

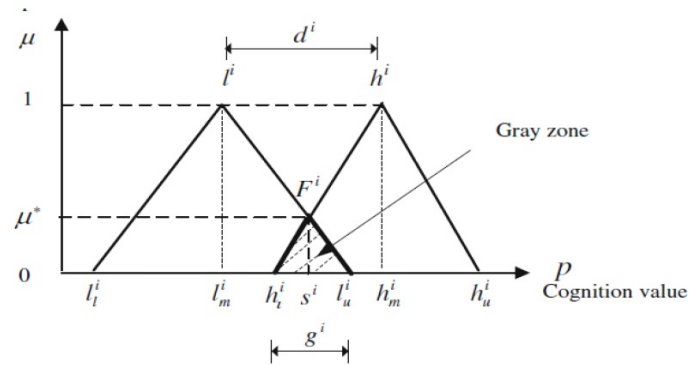


Figure 2: The gray zone and the consensus between the two the worst - the best approaches per criterion from an expert point of view

Lin, C.-J., and Wu, W.-W. [34]

5. Research Findings

One of the innovations of this study was the use of a combined method of strategic planning matrix and the use of the worst, best multi-fuzzy decision making method to identify indicators and determine human resource planning strategies in the Export Development Bank of Iran. A mixed method was used to identify and extract factors, dimensions and indicators.

1. Form matrices for evaluating internal and external factors: The logic of this approach was that in determining an effective strategy for human resource planning while making good use of strengths and opportunities and reducing weaknesses and threats in the bank to develop an effective model to be used for strategic planning. Given that the research method for identifying indicators was an exploratory approach, the SWOT matrix containing important internal and external factors of human resource planning was formed in the Export Development Bank of Iran. This matrix connects internal and external factors of human resource planning in the Export Development Bank of Iran. The current paper main objective is to formulate a strategic model of human resource planning by determining effective strategies. Having reviewed literature, the indicators, dimensions and components of human resource planning were identified and then internal and external factors evaluation matrices were formed.
2. Weighting the indicators: In this study, using questionnaire No. 1 and after assessing its validity and ensuring its reliability, the members of the statistical sample were asked to score the importance of each of the classified indicators and assign the scores 1 to 4 to the indicators to determine the degree of importance of each indicator to the strategic factor (strengths and weaknesses and opportunities and threats).
3. Using the Best Worst Method (BMW) Fuzzy multi-criteria decision making: In the first step of implementing this technique to aggregate the experts' predictions, the fuzzy average method was used for both the worst and best expert opinion in the form of proportional triangular fuzzy numbers. Regarding the method of fuzzy average, the opinion of an expert in the worst-case fuzzy average should be evaluated as the maximum and minimum expert opinion and his determined weights should be aggregated as an average. The triangle (l, m, u) was converted and displayed and then using equation (4.1) to normalize the fuzzy values and using equations (4.2), (4.3) and (4.4) the upper and lower limits and the mean of the worst - best of each expert opinion (lu, lm) was calculated as normal values, based on equations (4.5) and (4.6) fuzzy operations were performed on the mean values of the worst - best and finally the fuzzy

values of the means of the most optimistic, the worst optimism, the best pessimism, and the worst opinion of the expert were calculated from a pessimistic point of view. Given that these fuzzy results were not easy to understand and interpret, therefore they were converted to crisp values, and the values can usually be derived from the sum of triangular and trapezoidal fuzzy numbers by a crisp value which is the best corresponding mean.

4. Screening of indicators and set the threshold

- (a) **Determine the final weight of the indicators using the SWOT method:** In order to screen the indicators and determine the main criteria, it is necessary to identify and eliminate the less effective criteria by applying the threshold, and finally the effective and main criteria were identified and extracted.
- (b) **Determine the threshold:** Previous studies on multi-fuzzy criterion decision making show that researchers for screening components and indicators in most studies usually consider the number 7 as the acceptance threshold. In this study, the acceptance threshold for screening was set above 0.05.
- (c) **Screen and identify final criteria and indicators:** Given the determined threshold in the evaluation and determining the obtained indicators and criteria and the final weights for each criterion, the criteria whose final weight is calculated less than 0.05 were removed from the indicators and the final indicators were entered and identified separately for each matrix (internal and external) in the following tables 3: The following table 4 identifies and presents the external influencing factors in the strategic planning model of human resources in the Export Development Bank of Iran after the data screening:

The following table 4 identifies and presents the external effective factors in the strategic planning model of human resources in the Export Development Bank of Iran after screening the data:

5. SWOT analysis

The current paper analyzed the internal and external environment with the aim of investigating environmental factors such as political, social, economic conditions and the effect of new technologies. Obviously, the results of this analysis help banks to better understand the impact of this environment on their human resources. In the above table, the final evaluation of the intersection of the four factors of the strategic planning matrix based on the defined framework showed that according to the evaluation score of the internal factors matrix is equal to 1.68 and the score obtained from the analysis of the external factors evaluation matrix is equal to 2.62. The two axes of the position of human resources and strategic planning of human resources in the Export Development Bank of Iran are in a conservative position. Therefore, this bank is in a conservative position in the field of human resource planning and faces a relative weakness in terms of the internal environment. To achieve the goals and eliminate the weaknesses of the internal environment and turn them into strengths, and by emphasizing the identified strategies, it is suggested to change the current situation to a more effective strategy such as the human resource planning strategies identified and proposed in this study. Table 5 shows the results of the findings based on the analysis of strategic human resource planning in the Export Development Bank of Iran:

6. Determine the current strategic position of human resource planning in the Export Development Bank of Iran

In the current paper, given the evaluation score of the internal factors matrix which was equal to 1.68 and the score obtained from the analysis of the external factors evaluation matrix equal to 2.62, the Export Development Bank of Iran was classified as conservative based on the intersection of these two axes of human resources and strategic human resource planning.

Table 3: Identify internal influencing factors of strategic planning of human resources of Export Development Bank of Iran

No.	Matrix of internal factors	The best approach			The worst approach			Final weight	Integration of strategic planning matrix and fuzzy Delphi		
		The mean of the worst optimists	The mean best	The mean of the best optimists	The mean of the worst pessimists	The mean worst	The mean of the best pessimists		De-fuzzy numbers per index	Normalized weight index	Index rank
	Strengths										
4	Alignment among human resource subsystems	7.04	8.04	9.04	2.39	8.04	4.39	8.04	0.019	4	0.07
5	Quality of available human resources	7.13	8.13	9.13	4.96	5.96	6.96	7.04	0.016	4	0.07
7	Support and participation of senior managers for human resource programs	7.30	8.30	9.30	4.87	6.00	7.00	7.15	0.017	4	0.07
8	Employees education	7.61	8.61	9.61	4.57	5.61	6.61	7.11	0.016	4	0.07
9	Employees mental health	7.26	8.26	9.26	4.87	5.87	6.87	7.07	0.016	4	0.07
11	Employees scientific and technical expertise	7.35	8.35	9.35	4.96	5.96	6.96	7.15	0.017	4	0.07
12	Employees ethical and doctrinal competence	7.17	8.17	9.17	5.17	6.17	7.13	7.17	0.017	4	0.07
13	Employees job competencies	7.17	8.17	9.17	5.09	6.09	7.09	7.13	0.016	4	0.07
15	Employees resilience	5.91	6.91	7.91	4.09	5.09	6.09	6	0.014	4	0.06
16	Employees honesty	7.48	8.48	9.48	4.65	5.52	6.52	7	0.016	4	0.06
17	Employees innovation and creativity	7.30	8.30	9.30	4.78	5.78	6.78	7.04	0.016	4	0.07
18	Ability to motivate others to do work	7.43	8.43	9.43	4.70	5.70	6.70	7.07	0.016	4	0.07
20	Adequacy of staff salaries	7.26	8.26	9.26	4.78	5.78	6.78	7.02	0.016	4	0.06
29	Allocation of rewards based on equal performance	7.48	8.48	9.48	4.65	5.65	6.65	7.07	0.016	4	0.07
30	Presence of competency-based evaluation system	7.13	8.13	9.13	5.13	6.13	7.13	7.13	0.016	4	0.07
32	Organizational commitment of employees	7.30	8.30	9.30	4.91	5.91	6.83	7.11	0.016	4	0.07
38	Providing education through electronic systems	5.70	6.70	7.70	5.17	6.00	7.13	6.37	0.015	4	0.06
40	Staff training needs assessment	7.26	8.26	9.26	5.22	6.22	7.22	7.24	0.017	4	0.07
44	Having physical health	7.22	8.22	9.22	5.22	6.22	7.22	7.22	0.017	4	0.07
45	Having mental health	7.30	8.30	9.30	4.78	5.78	6.78	7.04	0.016	4	0.07
50	Human Resource Management Database	7.57	8.57	9.57	4.65	5.65	6.65	7.11	0.016	4	0.07
56	Attention to the attitude of payment based on the skills of Employees	7.13	8.13	9.13	4.96	5.96	6.96	7.04	0.016	4	0.07
59	Possibility of evaluating the electronic performance of human resources	7.61	8.48	9.48	5.09	6.09	7.09	7.28	0.017	4	0.07
66	Focus on the future	7.48	8.48	9.48	5.13	6.13	7.13	7.3	0.017	4	0.07
68	Attention to the growth and professional development of employees	7.57	8.57	9.57	4.91	5.91	6.91	7.24	0.017	4	0.07
	Total strengths							177.14			
2	Weak depiction of human resource management goals	7.26	8.26	9.26	4.78	5.78	6.78	7.02	0.017	4	0.07
3	Inadequacy of linear regulation of policies based on scientific logic	7.48	8.48	9.48	4.70	5.70	6.70	7.09	0.017	4	0.07
5	Lack of quantity of available human resource	7.26	8.26	9.26	4.96	5.96	6.96	7.11	0.017	4	0.07
6	Non-payment based on decent performance of human resources	7.13	8.13	9.13	5.00	6.00	7.00	7.07	0.017	4	0.07
7	Insufficient proportion of job to employee	7.13	8.13	9.13	5.04	6.04	7.04	7.09	0.017	4	0.07
8	Failure to develop strategic capabilities in human resources	7.39	8.39	9.39	5.00	6.00	7.00	7.2	0.017	4	0.07
10	Weak alignment between human resource strategies and macro-organizational strategies	7.00	8.00	8.65	5.22	6.22	7.22	7.11	0.017	4	0.07
11	Failure to allocate equal training opportunities for employees	7.43	8.43	9.43	4.83	5.83	6.83	7.13	0.017	4	0.07
12	Insufficient quality of work life of employees	7.30	8.30	9.30	4.91	5.91	6.91	7.14	0.017	4	0.07
13	Weakness in the balance between wages and employee performance	7.26	8.26	9.26	4.83	5.83	6.83	7.04	0.017	4	0.07
17	Weakness in fair distribution of rewards to employees	7.57	8.57	9.57	4.91	5.91	6.91	7.24	0.017	4	0.07
19	Absence of encouragement of innovative behaviors of employees	7.17	8.17	9.17	5.04	6.04	7.04	7.11	0.017	4	0.07
22	Weakness in improving current processes	7.30	8.30	9.30	5.00	6.00	7.00	7.15	0.017	4	0.07
23	Weakness in determining the time period for career advancement	7.22	8.22	9.22	5.17	6.17	7.17	7.2	0.017	4	0.07
24	Restrictions on equal promotion opportunities for all	7.48	8.48	9.48	5.13	6.13	7.13	7.3	0.017	4	0.07
28	Insufficient level of belief of senior managers in partnership with subordinates	7.43	8.43	9.43	4.83	5.83	6.83	7.13	0.017	4	0.07
34	Weakness in promoting a culture of performance improvement	7.57	8.57	9.57	5.00	6.00	7.00	7.28	0.017	4	0.07
37	Weakness and inadequacy in the existence of job turnover	7.48	8.48	9.48	4.78	5.78	6.78	7.13	0.017	4	0.07
38	Failure to integrate staff activities	7.43	8.43	9.43	5.04	6.04	7.04	7.24	0.017	4	0.07
40	Weakness in increasing the rate of return on human capital	7.65	8.65	9.65	5.13	6.13	7.13	7.39	0.018	4	0.07
41	Weakness in reducing human resources costs	7.48	8.48	9.48	5.39	6.39	7.39	7.43	0.018	4	0.07
42	Inadequate allocation of necessary human resources	7.22	8.22	9.22	5.00	6.00	7.00	7.11	0.017	4	0.07
48	Decreasing the level of job satisfaction of human resources	7.48	8.48	9.48	4.83	5.83	6.83	7.15	0.017	4	0.07
49	Failure to determine the future needs of human resources	7.43	8.43	9.43	4.96	5.96	6.96	7.2	0.017	4	0.07
50	Absence of a plan to develop and expand the activities of the organization	7.48	8.48	9.48	4.96	5.96	6.96	7.25	0.017	4	0.07
	Total weaknesses							179.31	1.00		1.68

Table 5: Analysis of strategic human resource planning matrix

	S	Strengths	W	Weaknesses	
	4	Alignment among human resource subsystems	2	Weak selection of human resource management goals	
	5	Quality of available human resources	3	Inadequacy of scientific logical policy making	
	7	Support and participation of senior managers for human resource programs	5	Absence of quotas of available human resources	
	8	Employees education	6	Non-payment based on decent performance of human resources	
	9	Employees initial health	7	Insufficient job for employees	
	11	Employees scientific and technical expertise	8	Failure to develop strategic capabilities in human resources	
	12	Employees ethical and doctrinal competence	10	Weak alignment between human resource strategies and macro-organizational strategies	
	13	Employees job competencies	11	Failure to allocate equal training opportunities for employees	
	15	Employees resilience	12	Insufficient quality of work life of employees	
	16	Employees honesty	13	Weakness in the balance between wages and employee performance	
	17	Employees innovation and creativity	17	Weakness in fair distribution of rewards to employees	
	18	Ability to motivate others to do work	19	Absence of encouragement of innovative behaviors of employees	
	20	Adequacy of staff salaries	22	Weakness in improving current processes	
	29	Allocation of rewards based on equal performance	23	Weakness in determining the time period for career advancement	
	30	Presence of competency-based evaluation system	24	Insufficient level of belief of senior managers in partnership with subordinates	
	32	Organizational commitment of employees	28	Weakness in promoting a culture of performance improvement	
	38	Providing education through electronic systems	34	Weakness and inadequacy in the retention of job turnover	
	40	Staff training needs assessment	37	Failure to integrate staff activities	
	44	Having physical health	38	Weakness in increasing the state of return on human capital	
	45	Having mental health	40	Weakness in reducing human resource costs	
	50	Human Resource Management Database	26	Inadequate allocation of resources human resources	
	56	Attention to the attitude of payment based on the skills of employees	42	Decreasing the level of job satisfaction of human resources	
	59	Possibility of evaluating the electronic performance of human resources	48	Failure to determine the future needs of human resources	
	66	Focus on the future	49	Absence of a plan to develop and expand the activities of the organization	
	68	Attention to the growth and professional development of employees	50	Insufficient level of belief of senior managers in partnership with subordinates	
		Strategy so		Strategy wo	
SWOT					
1	Attention to change management	So1	Recruitment and supply of human resources using modern methods	Wo1	Creating strategic capabilities through the establishment of a talent identification system, trained for replacement and competency development with the aim of empowering employees
2	New technologies				
3	Design new jobs	So2	Designing a system of job competencies and creating a talent repository for the development of human resources	Wo2	The need to re-engineer the recruitment and supply processes commensurate with future needs
4	Analyze current jobs		Comprehensive planning for the preservation and maintenance of knowledge experts and human capital		
5	Possibility of employment by contractor companies and bank subsidiaries	So3	Defining new supportive policies with the aim of aligning productivity with performance and service compensation system	Wo3	Establishment of incentive system for job motivation and innovation of human resources performance with the aim of improving activities
6	Possibility of direct recruitment from prestigious domestic universities				
7	Possibility of employment by job search organizations or institutions of the country	So4	Development of job and entrepreneurial capabilities of human resources with the help of new educational methods		The need to develop an appropriate policy to establish a relationship between the reward system and job competencies of employees
8	Possibility of withdrawal through the bank's electronic portal			Wo4	
9	Conducting professional and job interviews in human resources				
10	Improving human resource management	So5			
12	Job stability and security of formal human resources				
15	Ability to provide feedback to employees				
16	Evaluate employee feedback to improve performance				
17	Leaving compulsory service, such as suspending the service of employees				
18	Possibility of permanent dismissal from the service of employees				
19	Reorganization of organizational structure				
20	Development of human capital				
21	Development and training of managers				
22	Development of strategic capabilities of managers				
23	Improving rational decision making				
24	Having the ability to solve problems scientifically				
25	Risk-taking and the degree of risk acceptance of employees				
27	Enthusiasm for human resource management entrepreneurship				
28	Creating an organizational entrepreneurial leadership style				
29	Competitiveness of human resource management				
30	Attention to the ability to innovate and human resource management initiative				
31	Human Resource Management Conflict Management				
32	Possibility of attracting human resources from rival banks				
33	Reliability of human resources				
35	Having a pension fund				
36	Employees' adherence to work ethic and conscience				
37	Granting facilities and loans to employees				
38	Time Management				
39	Possibility of providing human resource from the bank's subsidiaries				
40	Organizational flexibility				
44	Promoting and facilitating the use of electronic platforms				
45	Entry of Z-generation employees into the workplace				
47	Putting information security in the spotlight				
48	Increasing decentralization in the workplace				
T	Threats	Strategy ST		Strategy WT	
1	Withdrawal of knowledge capital employees from the bank based on the coming wave of retirement	ST1	Designing the recruitment system and the necessity of using new sources of hiring considering the above rules and requirements	WT1	Re-engineering and reforming the performance appraisal system and improving operational processes
2	Weak restrictions on laws and regulations		Develop comprehensive policies to develop the path of career advancement and commensurate with the job competencies of human resources	WT2	Pathology of human resource maintenance system with elite recruitment approach
3	Unfavorable economic conditions in the use of human resources			WT2	The need to draw a dynamic vision to create a balance between organizational development and the provision of human resources needed
6	Restrictions on the allocation of necessary human resources	ST2	Establish alignment between macro policies of human resource management and human resource job development program	WT3	Intelligent design of job promotion and training for replacement system using manpower job competencies and complementary motivation procedures
7	Absence of human resource talent reservoir		Development and improvement of internal communication mechanism with the aim of two-way interaction and information feedback with the help of new technologies	WT4	Development of strategic capabilities of human resources and streamlining of organizational structure with the aim of continuous improvement
8	Weakness in identifying opportunities and threats to human resource management	ST3			
10	Absence of job advantages to retain experts and human resources		Developing a culture of organizational entrepreneurship and focusing on learning and empowering human resources		
11	Absence of meritocracy in appointments			WT5	
15	Focus on the peer-centered evaluation system	ST4			
17	Limit the use of innovative methods to improve human resource performance				
18	Weakness in the possibility of attracting specialized personnel from scientific centers	ST5			
19	Weak job security for contract employees				
20	Lack of monitoring and pathology of staff problems				
24	Request a permanent transfer to other organizations				
25	Apply for employment as an officer in other organizations				
26	Absence of necessary planning for the development of human capital				
27	Absence of necessary planning for the development and training of managers				
28	Resistance to change				
29	Absence of career path of human resources				
30	Uncertainty about the proper functioning of the human resources information system				
32	Inability of human resources to adapt to environmental conditions				
33	Low staff resilience to change				
34	Competitors				
38	Absence of necessary planning to streamline the organizational structure				
39	Weak performance appraisal system for critical events				
41	Restrictions on the supply of manpower from outside the organization				
44	Restrictions on contractual employment of manpower				
46	Not having enough motivation				
47	Employee dissatisfaction				
48	Intra-organizational instability				
49	Intelligent management of human resources				
52	Strategic roadmap				

The final score of the internal factors evaluation matrix IFE		The final score of the external factors evaluation matrix EFE
Conservative Cell 2	Offensive Cell 1	
Defensive Cell 4	Competitive Cell 3	

Figure 3: The current strategic position of human resource planning in the Export Development Bank of Iran

6. Discussion and Conclusion

Today, in financial and monetary organizations such as the Export Development Bank of Iran, human resources is a huge source of competitive advantage and key capabilities and effective and strategic to achieve success in carrying out specialized missions in financing the foreign trade sector of the country. And for this reason, they need to formulate strategic human resource planning as one of the main strategic needs in human resources in this specialized bank is considered and senior managers and the board should account for it with a forward-looking approach and perspective to develop and achieve goals and vision. The current paper emphasizes that not only identifying the effective factors in the formulation of strategic planning is the current and future needs of this specialized bank, but also points out that the development of strategic human resource planning for the country’s banking system due to the strategic nature of human resources to create creativity, innovation and profitability should be a priority in human resource management policies. Therefore, the current paper was conducted to achieve the above objectives with the aim of recognizing the effective factors and formulating effective strategies in human resource planning in the Export Development Bank of Iran while using modern methods of multi-fuzzy multi-criteria decision making and combining it with the strategic planning matrix, it examined and identified the internal and external factors affecting the formulation of macro-human resource management programs and policies in this specialized bank. The results and findings of this study showed that the current situation of human resources and strategic human resource planning in the Export Development Bank of Iran is in a conservative position and is relatively weak in terms of the internal environment and to achieve the goals it is necessary to eliminate the weaknesses of the internal environment and turn it into strength, and by emphasizing the identified strategies, change the current situation towards an aggressive strategy, which can lead to the synergy of the organization’s activities and create coherence and coordination between human resource policies and general strategies. Findings showed that 19 human resources planning strategies were identified accounting for the intersection of the two axes of the matrix of evaluation of internal factors (1.68) and equivalent external factors (2.62) and analysis of the strategic planning matrix, among them the aggressive strategy to strengthen and establish the system of recruitment and supply of human resources using modern methods, the defensive strategy

of the pathology of the human resources management system with the approach of attracting elites, the conservative strategy of creating strategic capabilities through the establishment of a talent identification system, trained for replacement and competency development with the aim of empowering employees as well as the competitive strategy for designing the recruitment system and the need to use new sources of recruitment considering the laws and requirements are the most effective strategies in planning the above bank's human resources.

The results of the current paper are consistent with that of Dehghan Dehanvi and Shokrian [30] on the implementation of the combined SWOT-TOPSIS model with a fuzzy approach to evaluate and rank human resources and business strategies in organizations (Case study: Road and Urban Development Organization in Yazd), findings of Musa Khani et al. [21] on designing a model of human resource management strategies based on the framework of competitive values in the National Iranian Gas Company and the findings of researchers such as Mojarad and Musa Khani [21] on identifying planning strategies Human resources with the approach of SRP, Teymouri et al. [35] in a study entitled Identifying the factors affecting the pattern of recruitment of human resources based on competence in petrochemical companies, Ghosi et al.[37] to a study on "Human resource planning with Relying on the role of talent management in maintaining potential human resources in the National Petroleum Products Distribution Company of Sari region", Safari et al. [36] and with the results of research by researchers such as Ruivo et al. [36] Reducing human resources by creating value for employees and considering the role of abuse, application and use of human resource planning among employees of economic enterprises in several countries of Germany, England and Portugal" and the results of Jenab [16] on the study of the effect of intelligent organizational resource planning system on the operations of 14 active American companies in "smart technology".

Suggestions

Findings suggest the strategy, strengthening and establishment of the system of recruitment and supply of human resources using new methods (weight 1.35) as the best offensive strategy to formulate strategic planning of human resources in the Export Development Bank of Iran and for strategic action in human resource planning. Therefore, it is suggested that the board of directors of this specialized bank provide the required human resources at the management and expert levels from scientific and standard evaluations such as employment by awarding scholarships to elites and distinguished students of prestigious universities, especially in information technology, communications and legal affairs. Also, using the ability and cooperation of subsidiaries to attract specialized, expert and capable workforces in a limited way and based on the needs of the medium term until the first wave of retirement of employees to act and provide and trained for replacement insensitive and managerial positions to form a talent treasury based on the competency approach and executive and scientific resume of employees and then while paying attention to the change in their organizational structure to implement special and long-term programs to increase job and entrepreneurial capabilities of human resources to achieve goals. Also, given that the competitive strategy of designing the recruitment system and the need to use new sources of recruitment, accounting for the rules and requirements determined by the weight (1.26) is proposed as the best strategy compared to other competitive strategies. Given the limitations incurred and the requirements arising from the implementation of notification laws it is recommended to meet human resources needs in accordance with the future needs of this bank from newer sources and methods such as constructive interaction with commercial banks and transfer of surplus human resources full-time or transfer as an annual mission and pay the necessary benefits. They can also outsource some consulting or executive services to qualified contractors to provide the required human resources. Also, given that pathology strat-

egy of human resource management system with elite recruitment approach with the weight (1.86) compared to other strategies was identified as the best defence strategy in the bank, it is suggested that the Board of Directors of this bank, while planning and strategically looking at re-engineering and reforming the performance appraisal system and improving operational processes, follow the procedure for compensating employees, including salaries, overtime and bonuses, or continuous and discontinuous benefits based on a competent model of the job performance of employees and their productivity and efficiency. Specialized staff and experts within the organization who are both creative and innovative and perform well in performance appraisal should be encouraged and rewarded. Failure to pay attention to this strategy will reduce employees' job interest and attachment to their work. Among the limitations of the research is an insufficient familiarity of managers and employees in the field of human resources of the Export Development Bank of Iran with the concepts of strategic management, lack of access to classified information in the field of human resource planning strategies and the extent of concepts related to human resources. It has not been widely available to researchers. For future studies, it is suggested that human resource planning strategies in other banking systems of the country be evaluated and other strategic management tools and non-fuzzy methods such as data foundation be used to collect data to explain the strategies.

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