

# Prioritizing the key factors for performance evaluation of Iran's banking system based on the balanced scorecard (BSC) approach and the fuzzy analytic network process (FANP)

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## Abstract

This paper determines the weights of the key factors for evaluating the performance of the banking system in Iran using the Balanced Scorecard (BSC) and Fuzzy Analytic Network Process (FANP) approaches. This paper first identifies key factors for the performance evaluation and then determines the cause-and-effect relationship between using the DEMATEL approach. The key factors were included in the BSC framework using the experts' opinions and following principles, including the need for all communication to lead to profitability, not considering the causal relationship from more tangible dimensions to intangible dimensions, and eliminating feedback causal relationships. The calculated weights show the maximum importance of the learning and growth dimensions and the minimum importance of the financial dimension. Among the key factors, on-time service is the maximum important, with customer retention being the minimum important. The extracted key factors can evaluate the performance of the country's banking system descriptively and based on the data obtained from declarations or official reports provided by different evaluators.

Keywords: Performance Evaluation, Key Factors, Banking System, Balanced Scorecard (BSC), Fuzzy Analytic Network Process (FANP)

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## 1 Introduction

The sustainability of a business is mainly based on its performance, and it should set a proper strategy. Business organizations are always looking to create such strategies, and monitor them to understand how the business is performing and how it can improve compared to its peers [2].

In recent years, there has been a significant change in management, in which instead of achieving high profits, it focuses on the goal of "organization of the future" and emphasizes various indicators such as customer satisfaction and service quality to be effective in the competition [2].

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One of the shortcomings of traditional approaches to performance evaluation is that it is easy to make misleading actions in financial indicators. Even in areas such as production, it is easier for managers to focus on cost reduction, which will cause quality loss and long-term damage. Therefore, the consistency of strategy and internal activities, and performance evaluation are necessary [8].

Performance evaluation based on key indicators leads to the improvement in the organization's performance, identification of weaknesses and strengths and opportunities, and identifying the key drivers of the organization's development in the future [7].

The performance evaluation system enables organizations to plan, evaluate and control their performance according to a predetermined strategy [18].

Therefore, in addition to using financial indicators to evaluate performance, the use of non-financial indicators, including indicators related to customers, products, and services, is also very important. The performance evaluation approach should be dynamic to adapt and align internal and external changes [3]. Accordingly, various models have been presented, the most common and prominent of which is the Balanced Scorecard (BSC) developed by Kaplan and Norton [12, 13]. The BSC deals with various measures of performance and provides a strategic framework that specifically considers the use of financial and non-financial measures, including the four aspects of finance, customers, internal business processes, and learning and growth [14].

The BSC meets the requirements of the performance management system based on measuring the achievement of strategic goals and the organization's performance based on non-financial and financial indicators [11].

Many large companies have confirmed that the BSC allows them to improve their performance by creating a link between their branches and members within the framework of a plan to realize the organization's macro goals [2].

The BSC is a comprehensive evaluation approach of the organization's performance based on financial and non-financial indicators, including four main finance, customers, internal business processes, and learning and growth aspects [7].

The four aspects of the BSC work in parallel and none of them can be ignored. The main objective of any business enterprise is to maximize the shareholders' wealth achieved by increasing the stock price capital. The financial performance improvement will be reflected in the increase in the stock market value [2].

Using the BSC as a performance evaluation approach, the organization's capacities can be developed based on the drawn goals and strategies [5].

## 2 Statement of the problem

Banks must continuously evaluate their performance and improve it from financial and non-financial aspects to achieve strategic goals and gain a sustainable competitive advantage [10] and hence a method to evaluate performance and consider some important financial and non-financial ratios are needed to identify strengths and weaknesses [20].

The BSC is a valuable tool for measuring the performance of banks and can provide good financial and non-financial information about the bank and help identify points and stages that can be improved and achieve strategic goals to improve their competitive position [10].

According to the BSC approach, there is a cause-and-effect relationship between multiple performance criteria and financial performance at the level of bank branches [3].

The BSC has been one of the most effective approaches to measure performance in recent years, and the two main reasons involved in this are the need to implement corporate strategy and increase competition [1].

Many businesses have used this approach for years; Gautreau and Kleiner [9] estimated that at least 60% of Fortune 1000 companies have used or are about to use the balanced scorecard approach.

The financial performance of banks is wide and includes many factors. On the other hand, each of these factors and related criteria is rooted in other factors and is affected by not necessarily financial actions. Accordingly, it is necessary to not only assess the bank's situation and understand it in the form of a strategic plan but also to improve, develop and transform within its framework.

Therefore, it is necessary to implement an integrated and comprehensive performance evaluation system, and all financial and non-financial aspects of the system should be considered and identify the effective factors in performance. At the same time, the cause and effect relationship between performance determining factors or performance criteria and indicators should be drawn and the mentioned factors should be categorized in the framework of the BSC approach.

According to the explanations, this paper aims to answer the following questions:

- What are the main factors determining the bank performance in the framework of the four aspects of the Balanced Scorecard (BSC)?
- What is the cause and effect relationship between the factors determining the bank's performance?
- What is the weight of each of the banks' performance evaluation criteria?

### 3 The theoretical framework of the research

Al-Gamazia and Kaddumi [2] examined the implementation of BSC in banks and its effect on financial performance. They distributed a questionnaire to key people, including managers and heads of banking departments in Jordan. The collected data analysis concluded that statistically, four finance, customers, internal business processes, and learning and growth aspects together or separately significantly impact the banks' financial performance. Findings show that the management of commercial banks should use the BSC because of its favorable effect on the financial performance of banks and focus more on the changing needs of customers. They have concluded that customers are considered the backbone of banks' stability, and on the other hand, a significant focus should be placed on the development of human resources as the backbone of any business organization.

Chiang et al. [7] evaluated the marketing cooperation of catering companies and credit card supply banks using the BSC approach. Emphasizing the presence of several factors affecting the success of marketing cooperation, they have pointed out the necessity of establishing a performance evaluation mechanism and monitoring its operation as a key factor. Their work is different in that instead of focusing on evaluating the performance of a specific business, they have evaluated the partnership between two service and banking businesses. They have benefited from Delphi approaches fuzzy hierarchical analysis process and balanced scorecard. The basic result of this study is the establishment of five key indicators of performance evaluation including customer, business partnership, financial, learning and growth as well as internal processes along with a total of thirty sub-factors. The indicators related to the customer account are more significant than other accounts.

The BSC approach enables organizations to understand priorities within the framework of their visions and missions and thus adjust their strategy. This approach has two basic advantages [15]: firstly, it helps all levels of the organization to understand the mission and vision and focus all their efforts on it, secondly, it seeks to evaluate how much the organization's resources are being used to meet the mission and uses the drawn vision to define and explain the goals. Managers can evaluate the effectiveness of the strategy by using the BSC. This approach emphasizes not only financial goals but also the importance of identifying non-financial values and developing human factors.

Zhou et al. [23] in their review focused on evaluating the performance of investment projects of financial and banking institutions in the field of energy using the BSC approach and fuzzy logic considering four strategic aspects and eight effective criteria in decision-making. The weights have been determined using the DEMATEL approach, and three different types of government, private and foreign banks have been considered to examine the performance in financing energy projects. The main result is that the technical and financial adequacy of the company investing in energy should be specially considered in the credit decision of financial institutions. Therefore, visiting the customer's place and paying attention to the adequacy of technology in the process of evaluating the customer's credit demand for a large energy project is of great importance for financial institutions, which relates to the significant relationship between technology performance and financial performance. In addition, it was concluded that credits should not be given to energy companies with high debt and insufficient liquidity.

Gupta et al. [10] evaluated and compared the performance of two Indian state-owned banks using the balanced scorecard, taking into account social and environmental aspects in addition to the four traditional strategic aspects, namely finance, customers, internal business processes, and learning and innovation. They have been collecting information and evaluating it for ten years from 2007 to 2017 and in the end, they have concluded that due to the declining performance of both banks from a financial point of view, their performance should improve from a non-financial point of view. In particular, the aforementioned banks should reduce staff costs and other operating costs to increase profit margins. Also, both banks should focus on customer satisfaction to ensure that the products and services provided meet customer expectations, thereby increase the business growth rate. On the other hand, it is necessary to improve their social and environmental performance to improve the reputation and credibility of banks with shareholders.

Al-Alawi [1] has benefited from the BSC approach in his review to evaluate online banking performance and at the same time, institutionalize a strategic plan in the financial sector of Bahrain. He has used a qualitative method

along with semi-structured questions in the form of an interview in three main elements, including the financial sector, i.e.: mission and strategic vision, strategic goals of the four perspectives of the BSC, and online banking performance measurement system. He has selected three banks out of the eleven Islamic and normal banks active in the country and has provided a framework for integrating the BSC criteria, as well as the necessary policies for the implementation and establishment of the performance management system and how to use a strategic plan to reduce the existing shortcomings. The strategic plan that he is interested in actually includes strategic goals and related indicators in each of the strategic aspects. He has gone to the representatives of prominent banks active in Bahrain for an interview regarding the identification of methods for measuring the performance of online banking departments. The result of his review is a list of solutions and suggestions for the financial sector. Among other things, he has suggested that the online banking sector should use its mission and vision due to its competitive dynamics. Also, the human goals resources have been emphasized especially the training of new information technology skills.

Panicker and Seshadri [19] have used the BSC approach to evaluate the performance of Standard Chartered Bank. In the study, in addition to understanding the importance of the finance aspect, they also realized the importance of observing and analyzing performance in other aspects, including the expectations and demands of shareholders, financial sector analysts, and financial and management experts. Therefore, they have considered the use of the BSC approach by Indian banks as a necessary matter and have emphasized the need for serious investigations to identify suitable criteria that can be used in the banking sector.

Al-Mawali et al. [3] in their study on the use of the BSC in evaluating the performance of Jordanian banking industry branches, concluded that the use of non-financial measures, especially customers, products, and services indicators rare of more importance because the use of the mentioned indicators also improves the financial performance of bank branches. Also, they concluded that financial indicators alone are not enough to provide a clear picture of branch performance, and there is a positive relationship between the use of multiple performance criteria through a comprehensive assessment based on the BSC approach and financial performance at the branch level. Another noteworthy point in the reported results of the research was that it is always possible to see traces of the plans and actions carried out in the banking system in at least one of the evaluation indicators.

According to Zhang et al. [22], performance evaluation is a very important aspect of Chinese commercial banks' activities. In their study, they suggest the BSC as a useful tool to improve the performance of these banks. They have shown how the BSC is used as a tool in the performance management system of commercial banks in China. Also, they have studied the performance of commercial banks, the use of a BSC in the management system, and the model of commercial banking services vision in the future.

## 4 Research model

Considering that in the research model has used the two approaches of the Balanced Scorecard (BSC) and Fuzzy Analytic Network Process (FANP), we have described both approaches below:

- **Balanced Scorecard (BSC)**

The Balanced Scorecard (BSC) is an approach that helps businesses implement strategies more effectively to achieve goals. It was developed by Kaplan and Norton [12]. Until then, the main focus of businesses was on financial strategies, with financial indicators were used to evaluate performance [23]. The BSC approach includes four main aspects of learning and growth, business processes, customers, and finance. In other words, three other aspects have also been considered in addition to the finance aspect, and all these four aspects are related. Accordingly, the balance has been emphasized in this approach, in which both financial and non-financial aspects are considered in the evaluation [4].

The statement of the vision document of the Islamic Republic of Iran on the horizon of 2025, presented in November 2012 has emphasized the role and importance of moral principles, social justice, advanced knowledge, the ability to produce science and technology, the superior share of human resources and social capital in national production. Also, macro-quantitative indicators such as investment rate and per capita income have been considered in this document, naturally, in all of these, missions and roles can be considered for the banking system.

- **Fuzzy Analytic Network Process (FANP)**

The Analytic Network Process process is a new theory that developed the process of hierarchical analysis to deal with the relationship of dependence in feedback, for this purpose, the hypermatrix approach is used. This

approach was developed by Thomas L. Saati to solve problems that involve dependence between criteria or options [17].

The numbers used in pairwise comparisons are fuzzy and are mentioned in table 1.

Table 1: Preferences and their fuzzy equivalent number in pairwise comparison of criteria and sub-criteria

Code	Preferences	Preferences fuzzy equivalents		
		Lower limit (l)	Medium (m)	Upper limit (u)
1	Equal importance	1	1	1
2	Same to slightly more important	1	2	3
3	A slightly more important	2	3	4
4	A slightly more important than more important	3	4	5
5	More important	4	5	6
6	More important than highly preferred	5	6	7
7	Highly preferred	6	7	8
8	Highly preferred to completely preferred	7	8	9
9	Completely preferred	8	9	10

To calculate the average numbers assigned to pairwise comparisons, the corresponding geometric mean of lower, medium and upper limit numbers is used. Here, K is the number of participants in the pairwise comparison.

$$M_{ij} = \left( \sqrt[k]{l_1 \times l_2 \times \dots \times l_k}, \sqrt[k]{m_1 \times m_2 \times \dots \times m_k}, \sqrt[k]{u_1 \times u_2 \times \dots \times u_k} \right)$$

To calculate the weights, the developed method provided by Chang [6] is used. First, based on the following relationship, we obtain Si values for each row of the fuzzy pairwise comparison matrix.

$$S_i = \sum_{j=1}^m M_{gi}^j \otimes \left[ \sum_{i=1}^n \sum_{j=1}^m M_{gi}^j \right]^{-1}$$

where, M is triangular fuzzy numbers inside the matrix of pairwise comparisons. In fact, when calculating the matrix S, each component of the fuzzy numbers is added like by like and multiplied by the fuzzy inverse of the total sum. This step is similar to calculating the normalized weights in the normal hierarchical analysis process method, but with fuzzy numbers. In the following, the Sis are compared with each other in terms of magnitude according to the following formula:

$$V(M_2 \geq M_1) = hgt(M_1 \cap M_2) = \mu_{M_2}(d) = \begin{cases} 1, & \text{if } m_2 \geq m_1; \\ 0, & \text{if } l_1 \geq u_2; \\ l_1 - u_2, & \text{otherwise.} \end{cases}$$

$$M_2 = (l_2, M_2, u_2), \quad M_1 = (l_1, M_1, u_1)$$

To calculate the weight of the criteria and options in the pairwise comparison matrix, it is enough to obtain the unnormalized weight vector by calculating the lowest value of V calculated in the previous step. In the last step, we normalize the weight vector obtained from the previous step, which was not normalized, to get the final weight vector, which is our final goal of fuzzy calculations.

To calculate the final weights of each of the strategic aspects and their related sub-criteria, the matrixes obtained through the normal hierarchy analysis process and the network hierarchy analysis process are used. Figure 1 shows schematically the model used and how to calculate the final weight of each fund and key evaluation factors.

## 5 Research Methodology

This is an applied descriptive-analytical paper. Data was collected and analyzed using library sources, interviews, and questionnaires. The statistical population includes managers and expert banking experts of the country including 32 subjects to identify and evaluate the evaluation criteria and sub-criteria as well as measure their relative importance.

To determine the performance evaluation criteria of the country’s banking system, the most important key factors have been listed first through interviews with experts, and then by using the approach proposed by Lawshe [16], Waltz and Bausell [21], their content validity has been evaluated to identify the most important factors. Using the

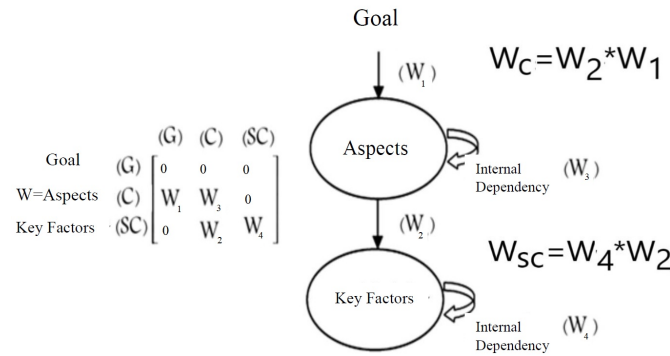


Figure 1: Integrate the weights obtained from the two approaches of normal and network hierarchical analysis process

DEMATEL approach, the cause and effect relationships between key factors have been identified, and then, using the consensus of experts, it has been placed in the framework of the strategic aspects of the BSC.

Considering that the collection of specialized and accurate data about the research topic is vital and none of the other probabilistic sampling plans provide the possibility of collecting such data, the non-probability and targeted judgmental sampling method is used in the selection of managers and experts.

The fuzzy Analytic Network Process (FANP) was used to determine the aspects' weights and their criteria. For the criteria content evaluation, the opinions of twelve available experts were obtained, with the opinions of six available experts were used to determine their weights in the context of the BSC. Data analysis was done in an Excel software environment.

## 6 Findings

The relationships between the key factors considered in the evaluation of the country's banking system depicted in Figure 2 was extracted based on the DEMATEL approach of extracting cause and effect relationships and the structure presented in the framework of the BSC strategic aspects. Considering that several causal relationships were extracted from the more tangible financial and customer aspects to the more intangible aspects of learning and growth as well as internal business processes, and on the other hand, in some cases there were also feedback relationships to the agent itself; therefore the following principles were followed in drawing the figure to reduce relationships and direct them from tangible factors to intangible ones:

- Relationships are considered from the bottom up, taking into account the impact of intangible factors on tangible factors, as well as the relationship between factors of the same level, with reverse order relationships are not affected.
- Feedback to the agent itself is not considered.
- Only if there is no communication with the factors of the higher aspect, the factors of the next aspect are communicated.
- The path of all cause and effect relationship leads to profitability.

Figure 3 shows the cause and effect relationship between strategic aspects.

There is also a cause and effect relationship between the key factors of performance evaluation in each strategic aspect, all of which are mentioned in Figure 4.

The table 2 is obtained by calculating the geometric mean of paired comparisons of the strategic aspects of the BSC and the weights of each of them have been extracted based on the approach used.

In the following, the network pairwise comparison table was extracted and the corresponding weights were calculated according to the cause and effect relationships between the strategic aspects, as shown in the table 3.

The super table of weights is finally extracted by completing the pairwise comparisons in the framework of the normal hierarchical analysis process and the network hierarchical analysis process, which is shown in table 4.



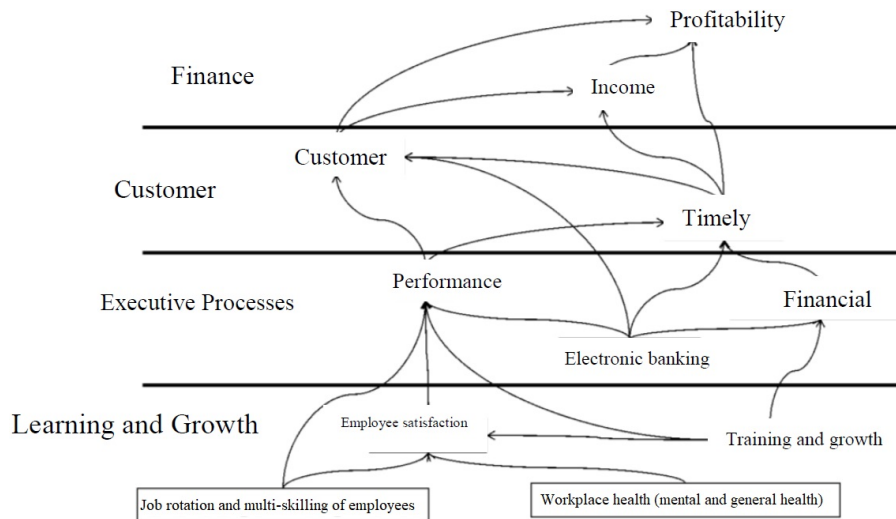


Figure 2: Cause and effect relationship between key factors in evaluating the performance of Iran's banking system

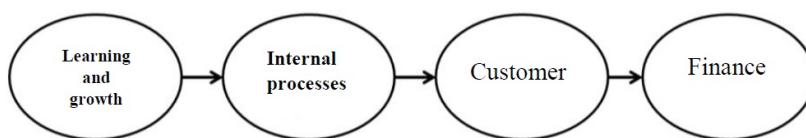


Figure 3: Cause and effect relationship between strategic funds in the evaluation of the performance of the banking system

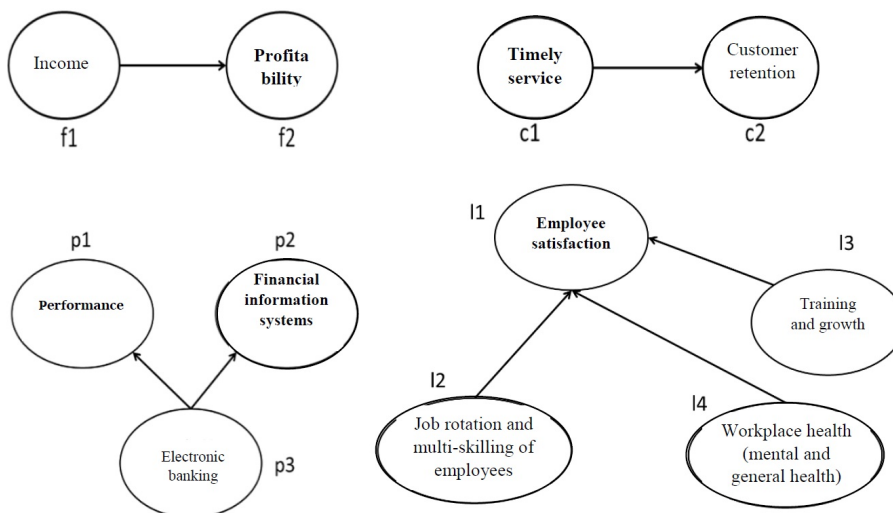


Figure 4: Cause and effect relationship between the sub-criteria of strategic aspects in the banking system performance evaluation

Table 2: Pairwise comparison of the strategic aspects of the BSC

Weight	Learning and growth			Internal processes			Customer			Finance			
0.22	1.66	0.37	0.31	2.56	0.88	0.76	2.24	0.75	0.64	1	1	1	Finance
0.26	2.40	0.63	0.54	3.84	1.73	1.43	1	1	1	1.57	1.32	0.45	Customer
0.16	1.19	0.18	0.15	1	1	1	0.70	0.58	0.26	1.31	1.14	0.39	Internal processes
0.36	1	1	1	6.72	5.67	0.84	1.85	1.59	0.42	3.24	2.69	0.60	Learning and growth

The final table 5 is obtained by multiplying the table according to the approach presented in the research model,

Table 3: Network pairwise comparison of the strategic aspects of the BSC

Weight	Customer			Finance			
0.53	2.84	1.09	0.89	1	1	1	Finance
0.47	1	1	1	1.12	0.92	0.35	Customer
Weight	Internal processes			Customer			
0.79	4.05	1.91	1.40	1	1	1	Customer
0.21	1	1	1	0.71	0.52	0.25	Internal processes
Weight	Learning and growth			Internal processes			
0.42	2.04	0.52	0.43	1	1	1	Internal processes
0.58	1	1	1	2.31	1.91	0.49	Learning and growth

Table 4: Super matrix resulting from normal and network pairwise comparisons

	G	F	C	P	L	F1	F2	C1	C2	P1	P2	P3	L1	L2	L3	L4
G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0.22	0.53	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0.26	0.47	0.79	0	0	0	0	0	0	0	0	0	0	0	0	0
P	0.16	0	0.21	0.42	0	0	0	0	0	0	0	0	0	0	0	0
L	0.36	0	0	0.58	1	0	0	0	0	0	0	0	0	0	0	0
F1	0	0.77	0	0	0	0.48	0	0	0	0	0	0	0	0	0	0
F2	0	0.23	0	0	0	0.52	1	0	0	0	0	0	0	0	0	0
C1	0	0	0.39	0	0	0	0	0.28	0	0	0	0	0	0	0	0
C2	0	0	0.61	0	0	0	0	0.72	1	0	0	0	0	0	0	0
P1	0	0	0	0.42	0	0	0	0	0	0.69	0	0	0	0	0	0
P2	0	0	0	0.47	0	0	0	0	0	0	1	0	0	0	0	0
P3	0	0	0	0.11	0	0	0	0	0	0.31	0	1	0	0	0	0
L1	0	0	0	0	0.43	0	0	0	0	0	0	0	0.47	0	0	0
L2	0	0	0	0	0.23	0	0	0	0	0	0	0	0.17	1	0	0
L3	0	0	0	0	0.06	0	0	0	0	0	0	0	0.36	0	1	0
L4	0	0	0	0	0.28	0	0	0	0	0	0	0	0	0	0	1

in which the local and overall weight of the significant key factors in the evaluation of the performance of the banking system is specified.

Table 5: The final weights of strategic aspects and key factors for Iran's banking system performance evaluation

Strategic aspects	Weight	Key factors of performance evaluation	Local weight	Total weight
Financial	0.12	profitability	0.37	0.04
		Income	0.63	0.07
Customer	0.31	Customer retention	0.11	0.03
		Timely service	0.89	0.28
Executive processes	0.12	Financial information systems	0.29	0.04
		Performance	0.47	0.06
		Electronic banking	0.24	0.03
Growth and learning	0.45	Employee satisfaction	0.20	0.09
		Training and development	0.30	0.14
		Job rotation and multi-skilling of employees	0.21	0.10
		Workplace health (mental and general health)	0.28	0.13

### 7 Discussion and conclusion

The banking system, as the main axis of the financial system, plays an important role in the economic development of a country, and therefore, its stability and development are an undeniable necessity. Instability in the banking system will bring adverse consequences such as an increase in the exchange rate, inflation, bank interest rate, interest rate of interbank loans, disruption in the distribution of economic resources, and an increase in outstanding claims of banks.



The adoption of a suitable evaluation approach is crucial in knowing the country's banking system performance and identifying the weaknesses, strengths, threats, and opportunities. In the not-so-distant past, purely financial criteria and indicators such as return on capital, internal rate of return, net present value, profit, loss, arrears, and so on were used to evaluate performance. However, new changes in business and the competitive arena have directed attention to customer orientation, and business executive processes as well as the important factor of human resources. This is important because the aforementioned factors have a causal effect on financial performance and can be used to understand the future horizon of the banking system.

Therefore, this paper, using the experts' points, inferring cause and effect DEMATEL approach, BSC, and Fuzzy Analytic Network Process (FANP) identifies the most significant factors in the banking system performance evaluation and the cause and effect relationship between them. Likewise, this paper calculates the weights of each of the strategic aspects and key factors.

A total of eleven key factors have been included in four strategic aspects and according to the cause and effect relationships obtained between the strategic aspects and the key factors of the banking system performance evaluation, finally, all the connections have led to income and profitability. Financial information systems should be taken into consideration as a part of executive processes according to the position it has acquired. Electronic banking has also been considered a factor in executive processes, and because its mechanisms are provided from outside the banking system, it can even be placed in the aspect of learning and growth. It is even possible to consider the factor of job rotation and multi-skilling of employees in the heart of the education and development factor in line with learning.

Among the strategic factors, the growth and learning aspect with a weight of 0.45 was given the highest priority, which indicates the high importance of human resources in the banking system. Next, the customer aspect with a weight of 0.31, and the internal business and financial processes aspects were placed with a weight of 0.12 each. Two noteworthy points here are that the financial aspect is the least important in the comprehensive banking system evaluation compared to other aspects, and the learning and growth aspect is not only more important but also in terms of the number of key evaluation factors it ranks first among the four factors.

Also, among the eleven key factors that can be used in the banking system performance evaluation, three factors of timely service, training and development, and health of the work environment (mental and general health) have the highest importance and the lowest weights of 0.28, 0.14, and 0.13, respectively. The importance is also related to customer retention, electronic banking, and financial information systems with weights of 0.03, 0.03, and 0.04 respectively.

Most of the previous research has been limited to evaluating the performance of banks and for this reason, different results have been obtained in this research that has evaluated the banking system. After all, despite the similarity in criteria, definitely different indicators should be used to measure and evaluate the state of the banking system. For example, in a particular bank, profitability may be considered as the result of deducting costs from revenues, but in the banking system, profitability can be considered as the percentage of profitable banks or profitable banking services in the country's banks.

Therefore, there is a significant difference between the performance evaluation of the bank or bank branches and the performance evaluation of the banking system. In evaluating the performance of bank branches, evaluation factors and indicators are more tangible and have more controllability, and can be provided through information related to payment prescriptions and operational and executive solutions. The data relating to banks' performance evaluation indicators are also more quantifiable. This is even though the performance evaluation indicators of the banking system are descriptive rather than prescriptive, and the related data are more qualitative. Therefore, in evaluating the performance of the banking system, instead of the financial or non-financial numbers used in the evaluation of banks, it is necessary to use the numerical approach to indicate success or failure.

The special suggestion to continue the investigation and research regarding the banking system performance evaluation is to draw a picture of the state of the banking system based on the key factors extracted in this research and appropriate related indicators according to the statements or data reported by the banks or relevant institutions. The trend governing the banking system should be monitored in this way. Thus, the responsible and decision-making bodies in the country's financial system, including the Central Bank, the Audit Bureau, and the Ministry of Economy and Finance, can provide periodic performance reports and appropriate solutions to improve the situation.

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