

# **Quantitative Analysis of Indicators of Competitive Advantage and Development of Iranian Banks (Case Study of Sepah Bank Branches in Tabriz)**

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## **Abstract**

Social capital is one of the new concepts raised in economic, political, and social surveys of developed countries and societies. Social capital is also of great importance for the banking industry. Social capital deals with unity, national cohesion, and solidarity in a bank; therefore, it is very important in communication capacities of a society. Social capital results into more benefit from physical capital and human capital, leading to increasing the capacity of a bank through the promotion of cooperation between individuals and social institutions. Therefore, it can be said that social capital is considered as a spiritual dimension of the bank. For this reason, it is very important to analyze key indicators for the growth of competitive advantages in banks. In this research, an attempt is made to extract and evaluate the most important parameter of development and competitive advantage in Iranian banks using the literature review and the opinions of experts working in the banking industry. A fuzzy nonlinear hierarchical analysis method is used in order to perform a quantitative analysis. The results suggest that the empowerment of employees is the most important indicator of development and competitive advantage for the country's banks. Therefore, the development of human resources should always be the first priority of banks.

**Keywords:** Competitive advantage, Banking development, Social capital, Fuzzy analysis

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## 1. Introduction

Today, considering the increasing number of customers all over the world, gaining a competitive advantage and achieving a sustainable development are of great importance as the ability to face and overcome the competition. By evaluating the strengths and weaknesses of competitors and investigating a way to fill the existing gaps, solutions can be created to gain a competitive advantage and develop. When organizations acquire better characteristics than their competitors, they actually create a boundary for their competition. In other words, gaining a competitive advantage is the skills that help an organization to survive in the competition. Most competitive advantages are created through knowledge and information; hence, successful organizations seek to obtain the latest technologies related to gaining a competitive advantage. Therefore, organizations that want to maintain their competitive boundary should implement strategies related to gaining competitive advantage so as to experience a sustainable development (Mases & Sharma, 2020). Meanwhile, achieving a competitive advantage in the banking industry—as an industry that has transformed itself through the use of unpredictable approaches—is more difficult and important. Also, since the financing system in Iran is bank-oriented, the development of the country's banks is also very necessary in terms of financing, the quality of financial intermediation, financial depth, and equipping resources for banks. The financial dominance of the government, the lack of appropriate and coherent policies in the government system, etc. have brought about many problems for the development of the country's banks and have challenged the financial strength of the banks and their capital adequacy. The development of banks is one of the components of competitiveness, including the availability of financial services, financing through the stock market, the cost of using financial services, ease of access to facilities, the availability of financial resources for risky investors, financial strength, regulation and supervision of the stock market, and the indicator of legal protection of lenders and borrowers. Therefore, the development level of the country's banks is defined as one of the subsets of competitiveness (Aliahmadi et al., 2024; Ashoka, & Keihani, 2021).

In recent years, the concept of social capital, which means that participation in the group and society can have positive benefits and functions for the individual, is one of the most common words that can enter the literature of other scientific fields from social sciences and it has even entered the common language. Emphasizing the importance of the positive effects of social capital on the individual and concerns about the decline of meaningful social relations in new societies are among the old concepts and topics of sociology, and it can be said that the word social capital in this sense is not a new concept and goes back to the opinions of sociologists such as Karl Marx, Émile Durkheim, or Georg Simmel. According to Émile Durkheim, when social cohesion decreases and the traditions and norms of the society do not guide the individual in their social behavior, the individual becomes abnormal. Karl Marx, in his famous discussion about "alienation from oneself", raised the negative and destructive effects of the division of labor process on humans, and Georg Simmel claimed that urbanization, by creating instrumental rationality and intense nervous activity, causes the emergence of disenchantment in social relationships, and also the indifference of humans towards each other (Khoshfar and Mirzakhani, 2016; Ghasemi, & Abolghasemian, 2023). Social capital has received more attention in demographic research and may lead to the development of theories in this regard. On the one hand, social capital is a resource originating from social relationships (Mehrani et al. 2019; Bakhshi Movahed et al., 2024). Social capital is a broad concept that encompasses various dimensions and includes various aspects such as social networks, trust, commitment, and shared values (Cai et al., 2020). Social capital is also very important in organizations so that since the past, the attention to organizations as social actors and the attention of experts to the needs and social issues related to the organization has provided a favorable ground for expanding the concept of social capital in organizations. From one point of view, social capital is a management phenomenon, for which various characteristics are defined including trust (norms), shared values and behaviors, communication, cooperation, mutual

commitment, and networks. Organizations with higher levels of social capital can be more successful than their competitors with less social capital.

Looking at the world surrounding us, the truth is revealed that today's world is very different from the past. In this regard, among the characteristics of today's world, we can mention the globalization of the economy, mass production and excess capacity in most markets, competition based on time, the abundance of information, the efficiency of communication and knowledge, the ever-increasing information and power of the customer, indicating the integration of global markets and the ever-increasing complexity of markets and the dynamics of the processing environment of manufacturing and service companies and institutions (Alavi Matin & Chavoshpour, 2016; Ashoka, & Keihani, 2020; Nozari et al., 2022). Meanwhile, gaining competitive advantage and creating growth and development in banks as one of the most important service organizations of the country becomes more important. The competitive advantage and development of the country's banks is a set of unique abilities of a bank that allows it to penetrate the desired markets and provide superiority over the competitors (Moradi Yegan Mahalle et al., 2020; Zandbiglari et al. 2021; Salahi et al. 2023; Nozari, 2024). Also, considering the high speed of technological changes in the banking sector and making changes and increasing diversity in the needs and requests of customers and the structure of the target markets, in order for banks to maintain and perpetuate themselves, they should somehow acquire a greater share of the market through gaining a competitive advantage and creating development in banking systems. For this reason, in this research, an effort is made to review the subject literature and analyze the opinions of experts in selected banks in Tabriz so as to extract and evaluate the most important development indicators. The fuzzy nonlinear analysis method is used in order to analyze the data.

The structure of this research is as follows. In the second section, the literature review is presented and the most important indicators are extracted. The research methodology is presented in the third section. Data analysis is presented in the fourth section, and finally the conclusion is presented in the last section.

## **2. Literature review**

Education turns people into human capital, encompassing the skills required for traditional and modern sectors of the economy, and it increases the productive power of individuals. Both technical and general educations increase the income by creating the ability to increase the production power of the society and especially the workforce. The main core of the human capital theory is that education increases the productive power of the workforce, also leading to an increase in economic growth. Social capital and cultural capital can determine the position and identity of people. Furthermore, a strong sense of identity can be an aspect of social capital. Also, social capital in general and social identity in particular are the product of tangible social relationships that the members of the society understand and can have many mutual effects on each other. Simply put, social capital can affect people's attitudes and perceptions towards ethnic groups, as well as their perceptions about their nationality and ethnicity, and can strengthen or weaken different identities and collective solidarity. Social identity also depends on the level of interference and blending of groups with each other, and the level of interference of groups also depends on the amount and type of social interactions of individuals and groups. Therefore, given the significance and role of cultural capital and social capital, it is essential to obtain a complete understanding of the dimensions of these two types of capital and an estimate of the type and degree of connection of each with social identity. Accordingly, another aspect of this research is measuring social capital and cultural capital. According to the social surveys conducted in Iran, the concept of group cooperation and social capital in social relationships is not recognized and people's trust in each other has weakened.

Nowadays, banks, as the largest financial institutions of every country, play a fundamental role in monetary and financial markets, attracting and encouraging customers to save and collect small capitals and put them

to work in manufacturing and service areas. Given the current competitive environment, it is the volume of facilities, financial capability, and scope of their activities that determine their share of financial markets and customers (Lee, 2017; Najafi et al., 2022). Currently, due to the intense competition among banks, banks will be able to change their conditions from competitive equality compared to other banks to competitive advantage if they have high power in marketing. Achieving a competitive advantage and attracting customers requires capabilities that are not easily obtained. In order to attract and retain customers, as well as maintain competitive advantage, it is necessary for banks to use effective marketing strategies in the banking system. Therefore, in such a situation, in order to attract and retain their customers, banks are forced to have a serious change in their attitude towards marketing and restructuring, because the stronger the customer attraction levers are, the greater the hope of gaining and retaining customers in the bank. Consequently, banks' understanding of customers' tendencies and behavior, as well as measuring their position, performance, and current conditions in the competitive market can increase the banks' share of customers and, as a result, increase the bank's income and profitability. As it is clear, the growth and profitability of the bank depends on its customers, and if the customers are not attracted to the bank, the bank will lose its growth and profitability (Rod et al., 2016). Effective marketing strategies can include understanding customer behavior, gaining competitive advantage, smart pricing, granting loans and facilities, electronic banking, mobile banking, easy use of modern banking, superior services, etc.

The success or failure of a bank cannot be imagined apart from the performance of the managers. A bank can be successful if it benefits from competent managers, various tools, and its existing facilities and potential in order to win. The factors leading to the bank's success include the use of information technology, marketing, customer orientation in its true sense and avoiding just chanting these slogans instead of actually putting them into practice. Bank managers must have the ability to identify new market opportunities, and to achieve this ability, special and professional experts must be at the service of the group. By benefiting from qualified managers and educated human resources, banks can have a permanent relationship with customers and the market, and by creating changes and developments, they can scrutinize the society.

Mohammadi et al. (2022) investigated the effect of organizational capabilities on competitive advantage in Bank Melli Iran with regard to the role of market dynamics and building relationships with customers using structural equations and SPSS and AMOS software. The results of the research indicate that organizational capabilities have a positive effect on competitive advantage in Melli Plus branches of Bank Melli Iran due to the mediating role of creating customer relationships. Hajjarian et al. (2022) conducted a study with the aim of presenting a green banking model based on innovation management to obtain a sustainable competitive advantage in this industry, causing a fundamental transformation in this industry, both in terms of providing services and in terms of structure and roles. Moradi Yagan Mahalle et al. (2020) conducted a study titled investigating ways to create competitive advantage in Refah Karkaran Bank. This research aimed to provide a model for creating a competitive advantage by emphasizing the role of social networks in Refah Karkaran Bank. Alavi Matin and Chavoshpour (2016) conducted a study titled investigating the effect of competitive advantages in order to attract and retain customers in the banking system. The statistical population of this research is the employees of Sepah Bank in Tabriz city, the sample size is 240 people. Due to the limited size of the population, all members of the population were selected as a sample. The research questionnaire has 56 options and four subscales: market learning ability, organizational innovation power, marketing capability, and sustainable competitive advantage. Validity and reliability are estimated to be 0.88 using Cronbach's alpha coefficient.

In this research, using the literature review, the most important indicators of development and competitive advantage in banks were extracted. Then, using the opinions of experts who were all managers and employees of Sepah Banks in Tabriz, these indicators were refined. These indicators are listed in Table 1.

**Table 1.** The most important indicators of development and competitive advantage in banks

Planning	W1
Empowerment of human resources	W2
Bank development	W3
Organizational atmosphere	W4
Contextualization of services	W5
Social capital and knowledge management	W6
Organizational Culture	W7
Individual characteristics	W8

The presented indicators were approved using the opinions of 15 experts working in the bank.

### 3. Methodology

This research seeks to investigate the key indicators of development and competitive advantage in banks using a quantitative approach. In this research, to investigate the indicators, eight indicators were extracted as the most important indicators firstly using the research background and experts' opinions, and using the distribution of the questionnaire based on the five-point Likert scale. For this purpose, 15 experts were surveyed. The reason for choosing these people was the access of authors in the field of study. In this research, the nonlinear fuzzy hierarchical analysis method was used to perform the quantitative analysis of data. Due to the ambiguous and inaccurate nature of data and information in real life and making decisions based on this inaccurate and uncertain information, the modeling process of many phenomena may not be done properly and efficiently. In order to solve the ambiguity and inaccuracy of individual judgments, the theory of fuzzy sets was proposed to introduce linguistic conditions (expressions) in the decision-making process. A linguistic variable is a variable whose value is expressed by linguistic expressions. The quantitative analysis method used in this research is described in the following.

In this research, a fuzzy nonlinear hierarchical analysis method, known as the Mikhailov method, is used to prioritize the most important indicators of development and competitive advantage in banks. In 2004, Mr. Mikhailov proposed a new approach to calculate weights in the fuzzy analytic hierarchy process (AHP) method. He called this method fuzzy prioritization. One of the most important features of this method is the calculation of the consistency rate in the fuzzy state (Nozari et al., 2022). The weights in this method are obtained from solving a nonlinear optimization model. The stages of Fuzzy Mikhailov's AHP, which is used in this paper, are as follows:

In this method, it is assumed that fuzzy pairwise comparisons are triangular fuzzy numbers. The deterministic vector of weight (priority)  $w = (w_1, w_2, \dots, w_n)$  is extracted in such a way that the priority rate is almost within the range of basic fuzzy judgments. In other words, the weights are determined so that Relation (1) is established.

$$l_{ij} \leq \frac{w_i}{w_j} \leq u_{ij} \quad (1)$$

Each deterministic weight vector ( $w$ ) with a degree applies to the above fuzzy inequations, which is measurable through the linear membership function of Relation (2) (in terms of the unknown rate):

$$\mu_{ij} \left( \frac{w_i}{w_j} \right) = \begin{cases} \frac{(w_i / w_j) - l_{ij}}{m_{ij} - l_{ij}} & \frac{w_i}{w_j} \leq m_{ij} \\ \frac{u_{ij} - (w_i / w_j)}{u_{ij} - m_{ij}} & \frac{w_i}{w_j} \geq m_{ij} \end{cases} \quad (2)$$

Considering the specific form of the membership functions, the fuzzy prioritization problem becomes a nonlinear optimization problem in the form of Relation (3).

$$\begin{aligned} & \max \lambda \\ & \text{Subject to:} \\ & (m_{ij} - l_{ij})\lambda w_j - w_i + l_{ij}w_j \leq 0 \\ & (u_{ij} - m_{ij})\lambda w_j + w_j - u_{ij}w_j \leq 0 \\ & i = 1, 2, \dots, n-1, j = 2, 3, \dots, n, j > i \\ & \sum_{k=1}^n w_k = 1, w_k > 0, k = 1, 2, \dots, n \end{aligned} \quad (3)$$

Given the nonlinearity of Relation (3), it is obvious that it is not possible to solve it without using software. Therefore, Lingo software was used to solve the models created in this research. Positive optimal values for the  $\lambda$  index indicate that all weight ratios are fully applied in the initial judgment, but if this index is negative, it can be understood that the fuzzy judgments are highly inconsistent and the weight ratios are approximately are applied.

#### 4. Findings

The process of ranking the key indicators of success in this research is divided into two main parts:

- 1) Determining the matrix of pairwise comparisons based on the integration of experts' opinions.
- 2) Using mathematical modeling to rank and obtain the weight of the factors in the research model.

In order to prioritize the indicators extracted in this research, fuzzy questionnaires using language variables were sent to 15 expert experts working in the field of banking in branches of Sepah bank in Tabriz. These experts were selected from active people and they had at least five years of experience. 14 questionnaires

were completed and received. These pairwise comparison tables are shown in Table 2. This table is used for calculations using the Mikhailov method.

**Table 2.** Pairwise comparison matrix of indicators of development and competitive advantage

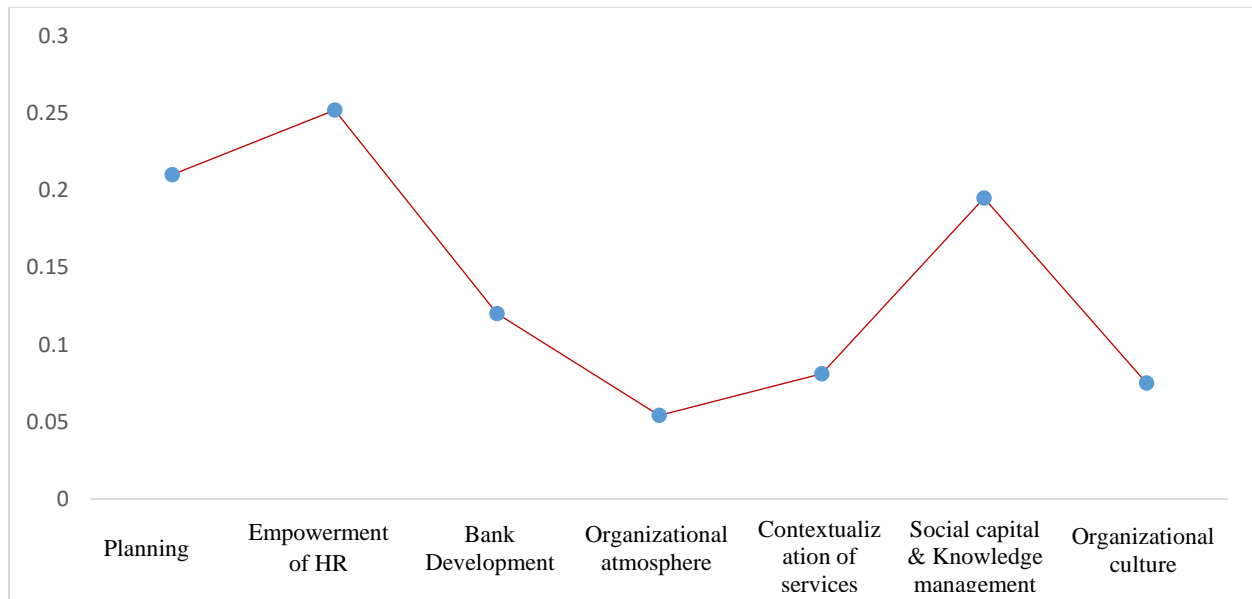
	W1	W2	W3	W4	W5	W6	W7
W1	-	-	-	-	-	-	-
W2	(1.2,2.5,3.25)	-	-	-	-	-	-
W3	(2.1,3.25,4)	(2.1,2.75,4.2)	-	-	-	-	-
W4	(2.31,3.12,5.1)	(1.1,1.75,2.25)	(1.5,2.25,3.1)	-	-	-	-
W5	(2.1,2.75,3.25)	(1.5,2.5,3.75)	(1.75,2.25,3.21)	(1.1,1.75,3.25)	-	-	-
W6	(2.1,2.75,4.3)	(1.25,2.11,3.35)	(2.4,3.4,4.5)	(1.75,3.25,4.1)	(1.11,2.25,3.24)	-	-
W7	(2.11,2.75,3.24)	(2.1,2.65,4.2)	(1.75,2.75,3.75)	(2.1,3.11,4)	(1.9,2.8,3.76)	(2.1,3.25,4.5)	-

By putting the data obtained from Table 2 in the nonlinear model (3) and solving the model using Lingo software, the weight and rank of each factor can be obtained. The results of calculations related to solving the nonlinear model are given in Table 3.

**Table 3.** Weight and rank of indicators of development and competitive advantage in the banks

Category	Code	Weight	Rank	Objective function ( $\lambda$ )
Planning	W1	0.21021	2	0.42514
Empowerment of human resources	W2	0.25213	1	
Bank development	W3	0.12021	4	
Organizational atmosphere	W4	0.05412	7	
Contextualization of services	W5	0.08115	5	
Social capital and knowledge management	W6	0.19514	3	
Organizational culture	W7	0.07514	6	

As can be seen in Table 3, a positive value for the consistency index indicates an acceptable consistency of the matrices. The position of each index is depicted in Figure 1.



**Figure 1.** Weight of indicators of development and competitive advantage in banks

As illustrated in Figure 1, empowerment of human resources has the highest weight; thus, paying attention to this index will bring a great competitive advantage for banks.

## 5. Conclusion

Achieving a competitive advantage in the banking industry—as an industry that has transformed itself through the use of unpredictable approaches—is more difficult and important. Also, since the financing system in Iran is bank-oriented, the development of the country's banks is also very necessary in terms of financing, the quality of financial intermediation, financial depth, and equipping resources for banks. The financial dominance of the government, the lack of appropriate and coherent policies in the government system, etc. have brought about many problems for the development of the country's banks and have challenged the financial strength of the banks and their capital adequacy. The development of banks is one of the components of competitiveness, including the availability of financial services, financing through the stock market, the cost of using financial services, ease of access to facilities, the availability of financial resources for risky investors, financial strength, regulation and supervision of the stock market, and the indicator of legal protection of lenders and borrowers. Therefore, the development level of the country's banks is defined as one of the subsets of competitiveness. In this regard, this research was carried out with the aim of investigating the indicators of competitive advantage and development of Iranian banks (a case study of Sepah Bank branches in Tabriz). The research had an exploratory design approach. The participants in this study included 15 experts in the field of banking. Their selection criteria were teaching, management experience in a bank, having a master's degree and higher in banking, management, and accounting. For this reason, in this research, an attempt was made to quantitatively analyze the most important indicators of development and competitive advantage in banks. Therefore, at first, the most important indicators were extracted using the literature. Then, these indicators were refined using a questionnaire using a five-point Likert scale of these indicators. Experts working in Sepah Bank branches in Tabriz were used for analysis. For the quantitative analysis, a nonlinear fuzzy hierarchical analysis method known as the Mikhailov method was used in this research. The results of the analysis showed that the development of capabilities in human resources is the most important indicator for competitive advantage in banks; therefore, it should always be given special attention.

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