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Identifying and determining the relationships between performance appraisal indicators in the Iranian banking system

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Abstract

The main purpose of this study is to extract the most important factors for evaluating the performance of the Iranian banking system using the consensus approaches of experts and then to determine the causal relationship between them. The questionnaires were completed by 12 experts. Using the DEMATEL method, the effect of the identified factors on each other was investigated. The most important factors identified for evaluating the banking system are profitability, revenue, financial information systems, customer retention, and timely service. The contribution of this study is to determine the causal relationships between performance evaluation indicators in the Iranian banking system using the methodology proposed for both the financial and non-financial factors.

Keywords: performance evaluation, banking system, causal relationship, financial factor, non-financial factor
2020 MSC: 91G15

1 Introduction

The banking industry is the core and mainstay of the financial system, and its stability and development are the key to economic development [2]. The existence of periods of instability in the banking system leads to adverse consequences and instability in various forms, such as increases in exchange rate, inflation, bank interest rates, interest rates on interbank loans and overdue receivables of banks [12]. Therefore, the banks need a way to evaluate their performance and consider some important financial ratios and find strengths and weaknesses [17].

Stability in the banking system provides a favorable environment for attracting deposits, facilitates the transfer of monetary policy, creates an efficient financial intermediary and enables it to be more successful in allocating resources to investments, and thus can improve economic growth and investment. Finally, a stable banking system increases the efficiency of the banking system and improves the distribution of resources in the economy [11]. Stability refers to conditions in which the banking system has not faced critical conditions. Therefore, considering that the consequences of stability in the banking system are the allocation and provision of financial resources, financial stability can be

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considered crucial in the stability of the banking system. Financial stability is always the most important concern of banks and consequently the economic system of a country [5]. Numerous factors affect financial stability, the most important of which are macroeconomic variables such as inflation, GDP, exchange rate and special conditions of banks, including bank profitability, loan-to-assets ratio and cost-to-income ratio [1]. Meanwhile, to increase market share and profitability, banks are constantly improving their performance to attract customers. This chain can be continued to reach other factors, including service delivery, staff attitude, access, promotion and bonuses, and job facilities [4, 6]. In recent years, there has been a dramatic managerial transformation in which, instead of achieving high profits, the focus is on the goal of "The Organization of the Future" and emphasizes various indicators such as customer satisfaction and service quality to be effective in the competition. 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. To adapt to internal and external changes, the performance evaluation approach must be dynamic. In the Iranian banking system, after the implementation of financial statements in February 2015, the Central Bank of Iran put the improvement of monetary and banking indices on the agenda to reduce imbalances and overdrafts and clear government and private sector debts by overdraft from banks. These indicators include asset growth, asset revaluation, cost reduction, profit, income, growth of non-common income such as currency sales, and high deposit absorption. Regarding private banks, based on the report of the Statistics Center of Iran [18], the total assets of these firms at the end of 2019 reached about 120 million dollars, which had a growth of about 38% compared to the previous year. According to this report, private banks have grown by 45% and other banks have grown by 30%. However, all banks face problems in their financial performance, which hurts the banking system and the country's economy.

Banks' financial performance is broad and includes several factors. On the other hand, each of these factors and related criteria is rooted in other factors and is influenced by actions that are not necessarily financial. Accordingly, it is necessary in the form of a strategic plan, not only to assess and understand the situation of the bank, but also to improve, develop and transform within it. Therefore, to implement an integrated and comprehensive performance evaluation system, it is necessary to consider all financial and non-financial aspects of the bank and identify the determinants of performance. At the same time, a causal relationship between performance determinants or performance criteria and indicators should be determined, and the mentioned factors should be categorized within the framework of the balanced scorecard approach. For this purpose, this study seeks to answer the following questions:

- What are the most important determinants of bank performance?
- What is the causal relationship between the determinants of bank performance?
- Do the bank's performance metrics ultimately lead to financial performance?

Various studies are available in the literature regarding the relationship between financial performance metrics and other performance metrics in banks in developing countries [3, 7, 8, 10, 13, 14, 15, 16, 21]. These studies indicate that the relationship between financial performance metrics and other performance metrics in banks is very important, and on the other hand, various methods of analysis is used such as linear programming methods, exploratory factor analysis, analysis of variance, regression analysis, time series analysis, and decision-making analyzes based on evidence and reports, as well as the views of experts or data from field studies and questionnaires. Rashid et al. [16] examined the relationship between customer loyalty and the financial performance of Islamic banks in Bangladesh. This study also examined the impact of service quality on customer loyalty using the five dimensions of tangibility, empathy, confidence, reliability and responsiveness to determine the quality of services. The findings of this study show that the financial performance of Islamic banks in Bangladesh depends more on financial and nonfinancial factors than on customer loyalty. Phan et al. [15] examined the impact of financial technology on bank performance in Indonesia. Through several multiple sub-tests and resistance tests, such as sensitivity to banking characteristics, the effects of the global financial crisis, and the use of alternative estimators, it has been concluded that financial technology companies negatively predict the performance of banks.

2 Methodology

The present study is descriptive-causal in terms of purpose and applied in terms of type of use, because it is an attempt to understand a specific situation in the real world to apply the findings to provide solutions for development and improvement. For this, the initial list of the most significant factors in evaluating the performance of the banking system was extracted based on a library study on comprehensive performance evaluation of banks and then using the face-to-face interviews and completing open questionnaires provided to experts. The panel included a total of twelve

experts who also participated in the evaluation of the initial list of factors to be considered in the evaluation of the bank to ensure the content validity. Therefore, for screening the list of primary factors for bank evaluation and ensuring content validity, the approaches proposed by Lawshe and Waltz and Bausell are used [9, 19]. Because the accuracy of the initial evaluation factors was passed through the filter of experts and the relevant corrections were applied, the formal validity of the data is guaranteed. To extract the causal relationships between the identified performance evaluations, the decision-making trial and evaluation laboratory (DEMATEL) method is used. The research model is shown in Fig. 1.

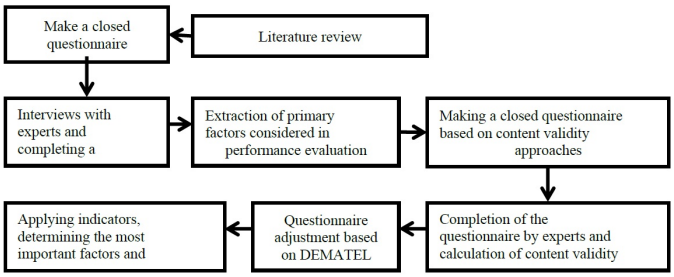

Figure 1: The model used to extract the most important factors of bank performance evaluation and their causal relationship

2.1 Content validity

Content validity ratio (CVR) categorizes each question of the questionnaire based on the 3-point Likert scale, "item is necessary", "item is useful but not necessary" and "item is not necessary". Then, the CVR is calculated according to Eq. (2.1):

$$CVR = \frac{n_e - \frac{N}{2}}{\frac{N}{2}} \tag{2.1}$$

where n_e is the number of panel members who choose that the item is necessary and N is the total number of the panel. The acceptable value of the CVR for 12 respondents is 0.56, which has been applied. The content validity index (CVI) is also determined based on a 4-point Likert scale by dividing the number of experts who grade the item 3 or 4 by the total number of the panel. The minimum acceptable value for the CVI is 0.79, and if it is less than 79.0, that item should be removed.

2.2 DEMATEL approach

Using the DEMATEL approach, it is possible to identify the pattern of causal relationships between a category of criteria. This method examines the intensity of communication in the form of scoring and examines their important feedback. Based on [20], the steps of the DEMATEL approach are as follows:

1. Forming a direct relationship matrix, Eq. (2.2)- To identify N criterion relationships, first create an $N \times N$ matrix. This matrix is represented by X. Experts are then requested to determine the effect of each criterion on other criteria with a number from zero to four. A simple average of scores is used, and the matrix of final relationships is formed. The five-point scale of the DEMATEL technique and the definitive equivalent for verbal expressions are presented in Table 1.

Table 1: Definitive equivalent for verbal expressions in DEMATEL technique

1	**2**	**3**	**4**	**5**
No impact	Very little impact	Low impact	High impact	Too much impact

2. Normalization of direct relationship matrix: The formula $N = X/K$ is used to normalize the direct relationship matrix. To calculate k (Eq. (2.3)), first the sum of all rows and columns is calculated. The largest number is represented by K. All numbers in the direct relationship matrix are divided by K.
3. Calculating the complete relationship matrix - To calculate the complete correlation matrix, first an identity matrix is formed and then Eq. (2.4) is used.

$$X = \begin{bmatrix} 0 & \cdots & x_{n1} \\ \vdots & \ddots & \vdots \\ x_{1n} & \cdots & 0 \end{bmatrix} \tag{2.2}$$

$$k = \max \left\{ \max \sum_{j=1}^{n} x_{ij} \cdot \sum_{i=1}^{n} x_{ij} \right\}; \qquad N = \frac{1}{k} \times X \tag{2.3}$$

$$T = N \times (1 - N)^{-1} \tag{2.4}$$

4. Create Causal Diagram
   - The sum of the elements of each row (D) for each factor indicates the extent to which that factor influences other factors in the system (The extent to affects other variables).
   - The sum of the elements of the column (R) for each factor indicates the extent to which that factor is affected by other factors in the system (The extent of being influenced by other variables).
   - Therefore, the horizontal vector $(D + R)$ indicates the effect of each factor on other factors.
   - Vertical vector $(D - R)$ indicates the influence of each factor. In general, if $D - R$ is positive, the variable is a causal variable, and if it is negative, it is a cause.
   - Finally, a Cartesian coordinate system is drawn. In this system, the longitudinal axis is $D + R$ and the transverse axis is $D-R$. The position of each factor is determined by a point with coordinates $(D+R, D-R)$ in the system.
5. Drawing the relationship map: To draw the Network Relations Map, the threshold value must be calculated. In this way, it is possible to ignore minor relationships and draw a network of significant relationships. Only relationships whose values in the matrix T are greater than the threshold value will be displayed in the network relationship map. To calculate the value of the threshold of relations, it is sufficient to calculate the average values of the matrix T. After the threshold intensity is determined, all values of the matrix T that are smaller than the threshold are zero, i.e. that causal relationship is not considered.

3 Findings

In two stages of the research, the experts are referred to; in the first stage, 12 people participated to ensure the content validity, and in the second stage, 8 experts participated. Based on the literature review, following interviews with the experts and completing a questionnaire by them, a total of 75 key success factors were identified, which were again provided to the mentioned experts to assess the content validity. Based on the approaches proposed by Lawshe [9] and Waltz and Bausell [19], content validity indices for each factor were calculated according to the opinions received from the experts. By applying threshold values, 21 factors were finally selected, which are presented in Table 2.

Table 2: Selected factors in evaluating the banking industry based on content validity

No.	Critical Success Factors	Number of experts	Significance (CVR)	Resolution (CVI1)	Simplicity (CVI2)
1	Revenue	12	1.00	1.00	1.00
2	Profitability	12	0.83	1.00	0.83
3	Resource management	12	1.00	0.92	0.83
4	Financial information systems	12	0.67	1.00	0.92
5	Average balance of debt instruments	12	0.83	0.92	0.92
6	Collecting debts	12	0.67	1.00	0.75
7	Customer retention	12	0.67	1.00	0.92
8	Attention to profitable customers	12	0.83	1.00	0.92
9	Customer commitment	12	0.67	0.92	0.83
10	Timely service	12	1.00	1.00	0.92
11	Marketing activity	12	1.00	0.92	0.75
12	Operational advantage	12	0.67	0.92	0.83
13	Transparency	12	0.83	1.00	0.83

14	Efficiency	12	1.00	0.92	0.83
15	Electronic banking	12	1.00	0.92	0.83
16	Training and development	12	0.83	1.00	0.92
17	Employee satisfaction	12	0.67	0.83	0.83
18	The share of awareness and knowledge	12	1.00	1.00	0.83
19	Job rotation and multi-skilled employees	12	0.67	0.92	0.83
20	Safety, health, and welfare	12	0.83	0.92	0.83
21	Establish organizational justice	12	1.00	1.00	0.83

According to the statements of the experts and the agreement reached with them, instead of the three factors of customer retention, attention to profitable customers and customer commitment, the factor of customer longevity is replaced. Customer longevity can also include the commitment and profitability of some of them. In addition, profitability is considered one of the factors. Marketing activity includes different activities and does not set a specific strategic goal. Therefore, this item is also eliminated. Organizational justice is also eliminated due to ambiguity. The share of awareness and knowledge is also somewhat ambiguous and is in line with factors such as training and development, and even job rotation and multi-skilled employees. Using literature and the experts' opinion, the definition of each critical success factor selected to evaluate the performance of the banking system is provided, which is summarized in Table 3.

Table 3: Definition of the most critical success factors in evaluating the performance of the banking system

No.	**Critical success factors**	**Definition**
1	Revenue	Revenue from: participation, investment and provision of facilities / banking services and financial consulting
2	Profitability	Net profit and return on income from banking / investment services and assets
3	Resource management	Access to effective resources such as: current accounts, savings, short-term deposits and long-term deposits Access to ineffective resources such as: guarantee deposit accounts, pre-receipt of documentary credits, Pre-receipt of transactions, miscellaneous creditors, supervision and branch remittances, net sold bank checks, unclaimed balances, unused managed funds
4	Financial information systems	A set of elements and activities related to the collection, storage, management, processing, retrieval and reporting of financial information to analyze the status of the organization, and financial and business decisions
5	Average balance of debt instruments	Average balance of various facilities, both current and non-current, in the form of contracts
6	Customer longevity	Ability to retain the customer by providing satisfaction and creating conditions for them to receive services again
7	Timely service	Fast, convenient, and enjoyable customer service
8	Operational advantage	Increase effectiveness and efficiency through the development and application of information technology in the organization, software operation, quality management, risk management and evaluation
9	Efficiency	Optimal use of resources or minimum cost with existing technology
10	Transparency	Disclosure of the nature and type of services, investments, details of transactions with natural and legal persons, current non-current facilities and collaterals in order to earn money in the financial statements and transparency in the management of the organization
11	Electronic banking	Providing online banking services by providing facilities for employees to increase the speed and efficiency in providing onsite banking services as well as inter-branch and interbank processes around the world and providing communication and information facilities to customers to perform desired banking operations safely at any time.
12	Internal process of the bank	Execution methods, activities or specific ways of doing work in order to create value for the customer
13	Training and development	Training employees and managers and gaining the necessary competence to perform tasks
14	Employee satisfaction	Assess the individual from their working conditions or feeling satisfied with the job as a motivating factor
15	Job rotation and multi-skilled employees	Putting employees in the right position to provide the best performance and gain knowledge about jobs and different processes
16	Safety, health, and welfare	Ensuring environmental health by evaluating and controlling all aspects of physical, chemical and biological factors affecting health and behavior

3.1 Extraction of causal relationships

To complete the relationship matrix based on the DEMATEL approach, the opinions of 8 experts are used. Then the identity matrix is subtracted from the normal matrix, inverted, and then the normal matrix is multiplied by

it, which is shown in Table 4. Next, the identity matrix is subtracted from the normal matrix, inverted, and then multiplied by the normal matrix. The result is shown in Table 5.

Table 4: Average opinions of experts on the impact of factors on each other (N)

Factor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	sum of row
Revenue	0.00	3.55	1.09	1.00	2.91	1.00	2.00	1.00	1.18	1.00	2.18	1.00	1.91	2.64	1.00	2.18	3.18
Profitability	2.00	0.00	0.27	1.27	1.64	1.00	2.00	1.00	1.00	1.27	2.55	1.00	2.55	3.00	1.00	2.18	3.18
Average balance of debt instruments	3.27	2.91	0.00	0.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	0.09	1.18	1.27
Resource management	3.09	3.00	1.09	0.00	2.55	3.00	2.09	1.91	2.45	1.91	2.18	2.18	2.18	1.91	1.91	1.91	3.82
Financial information systems	2.36	2.09	2.00	2.27	0.00	2.45	2.09	2.09	2.18	2.09	1.82	1.82	2.09	1.64	1.18	1.00	2.18
Customer longevity	3.55	3.55	2.00	2.00	1.00	0.00	2.82	0.78	1.73	1.73	1.00	1.00	1.00	1.00	1.00	1.00	2.00
Timely service	3.00	3.00	0.09	1.00	1.09	3.55	0.00	1.00	3.55	3.00	1.00	1.18	2.00	1.82	1.09	0.45	1.55
Operational advantage	2.55	2.91	0.36	2.00	2.00	3.00	2.91	2.00	0.00	2.55	1.00	0.73	1.64	1.73	1.00	0.45	1.45
Efficiency	3.00	3.18	0.27	1.00	2.00	2.55	3.55	2.00	2.55	0.00	2.00	2.00	2.18	1.64	1.00	1.64	2.64
Transparency	1.00	1.00	0.00	2.00	2.00	2.18	2.45	1.36	1.91	2.00	0.45	1.18	1.00	1.91	0.36	1.18	1.55
Electronic banking	3.00	3.55	0.27	2.00	3.27	3.55	3.55	2.55	3.55	3.45	0.00	2.00	2.45	2.55	1.00	1.18	2.18
Internal process of the bank	3.27	3.00	0.00	1.00	2.00	2.55	2.55	1.55	2.64	2.55	1.00	0.00	0.91	1.73	1.18	1.73	2.91
Training and development	3.18	3.55	0.18	2.55	2.55	3.45	3.45	2.00	3.55	3.55	2.55	2.55	0.00	3.55	2.55	2.55	5.09
Employee satisfaction	3.18	3.55	1.09	2.91	2.00	3.55	3.55	2.00	3.55	3.55	2.00	2.55	2.00	0.00	1.00	2.91	3.91
Job rotation and multi-skilled employees	2.55	2.55	0.09	1.00	2.00	3.45	3.55	1.00	3.45	2.55	1.00	1.00	2.00	3.55	0.00	2.18	2.18
Safety, health, and welfare	2.45	2.45	0.27	1.27	1.00	3.55	3.55	1.00	3.55	3.55	1.00	1.00	2.55	3.55	2.00	0.00	2.00
Sum (D)	4.30	4.60	1.05	2.58	3.10	4.18	4.34	2.56	4.07	3.72	2.54	2.40	2.99	3.52	1.89	2.57	
Sum (R)	2.81	2.69	2.04	3.55	3.09	2.61	2.84	2.81	3.29	2.35	3.98	2.90	4.42	4.10	3.43	3.51	
$D + R$			1.09	1.00													
$D - R$			0.27	1.27													

Table 5: Calculation of Matrix T

Factor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Revenue	0.18	0.28	0.07	0.14	0.20	0.21	0.24	0.14	0.21	0.19	0.17	0.13	0.18	0.22	0.11	0.17
Profitability	0.23	19	0.05	0.14	0.17	0.20	0.23	0.13	0.20	0.19	0.17	0.13	0.19	0.22	0.10	0.16
Average balance of debt instruments	0.21	0.21	0.03	0.08	0.12	0.17	0.16	0.10	0.17	0.14	0.11	0.10	0.12	0.14	0.06	0.11
Resource management	0.31	0.32	0.09	0.14	0.23	0.30	0.29	0.18	0.28	0.25	0.19	0.18	0.22	0.24	0.15	0.19
Financial information systems	0.26	0.27	0.10	0.18	0.15	0.26	0.25	0.17	0.24	0.23	0.17	0.16	0.19	0.21	0.12	0.15
Customer longevity	0.26	0.27	0.09	0.15	0.15	0.16	0.24	0.12	0.20	0.19	0.13	0.12	0.15	0.17	0.10	0.13
Timely service	0.26	0.27	0.05	0.14	0.16	0.26	0.19	0.13	0.26	0.23	0.14	0.13	0.18	0.20	0.11	0.13
Operational advantage	0.24	0.27	0.06	0.16	0.18	0.25	0.25	0.16	0.17	0.22	0.13	0.12	0.17	0.19	0.11	0.12
Efficiency	0.29	0.31	0.06	0.16	0.21	0.27	0.30	0.18	0.27	0.18	0.18	0.17	0.21	0.22	0.12	0.17
Transparency	0.18	0.19	0.04	0.14	0.16	0.20	0.22	0.13	0.19	0.18	0.10	0.12	0.13	0.17	0.08	0.12
Electronic banking	0.33	0.36	0.07	0.21	0.27	0.34	0.35	0.22	0.33	0.31	0.16	0.20	0.24	0.27	0.14	0.19
Internal process of the bank	0.27	0.28	0.05	0.14	0.19	0.24	0.25	0.15	0.24	0.23	0.14	0.11	0.16	0.20	0.11	0.16
Training and development	0.37	0.40	0.08	0.24	0.27	0.36	0.38	0.22	0.36	0.34	0.23	0.22	0.20	0.32	0.19	0.24
Employee satisfaction	0.34	0.37	0.09	0.23	0.24	0.34	0.36	0.21	0.34	0.32	0.21	0.21	0.24	0.22	0.14	0.23
Job rotation and multi-skilled employees	0.29	0.30	0.06	0.16	0.21	0.30	0.31	0.16	0.30	0.26	0.16	0.15	0.21	0.27	0.10	0.19
Safety, health, and welfare	0.29	0.31	0.06	0.17	0.19	0.31	0.32	0.16	0.31	0.29	0.16	0.15	0.22	0.27	0.15	0.14
Sum (D)	4.30	4.60	1.05	2.58	3.10	4.18	4.34	2.56	4.07	3.72	2.54	2.40	2.99	3.52	1.89	2.57
Sum (R)	2.81	2.69	2.04	3.55	3.09	2.61	2.84	2.81	3.29	2.35	3.98	2.90	4.42	4.10	3.43	3.51
$D + R$	7.12	7.30	3.09	6.13	6.19	6.79	7.18	5.36	7.36	6.07	6.52	5.31	7.41	7.63	5.32	6.08
$D - R$	1.49	1.91	-0.99	-0.96	0.01	1.57	1.50	-0.25	0.77	1.37	-1.44	-0.50	-1.43	-0.58	-1.53	-0.93

As can be seen from Table 5 and based on the values calculated for $(D - R)$, it can be said that profitability is the most important consequence and customer retention is the most important cause. Figure 2 shows the status of factors in terms of impact and effectiveness.

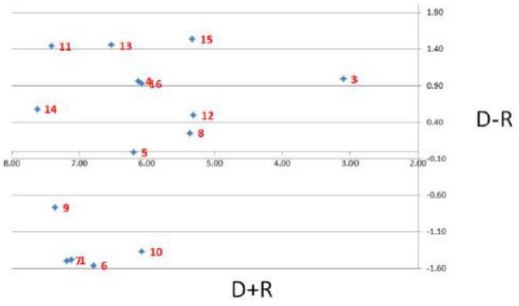

Figure 2: Influence and effectiveness of factors evaluating the performance of the banking system

To plot the relationship between the factors, the threshold value or the mean value of the cells in Table 5 is calculated, which is equal to 0.19, but to reduce the causal connected lines, this value is increased by 35% to 0.26. In other words, all items less than this value are deleted. All factors that have zero row and column cells are removed. The result is shown in Table 6.

Finally, the causal relationship diagram is drawn based on Table 6. As shown in Fig. 3, different factors are related to each other in the form of cause and effect.

Table 6: Calculation of Matrix T

Factor	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Revenue	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Profitability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Financial information systems	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Customer longevity	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Timely service	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Efficiency	0.29	0.31	0.00	0.27	0.30	0.27	0.00	0.00	0.00	0.00	0.00
Electronic banking	0.33	0.36	0.27	0.34	0.35	0.33	0.00	0.00	0.27	0.00	0.00
Training and development	0.37	0.40	0.27	0.36	0.38	0.36	0.00	0.00	0.32	0.00	0.00
Employee satisfaction	0.34	0.37	0.00	0.34	0.36	0.34	0.00	0.00	0.00	0.00	0.00
Job rotation and multi-skilled employees	0.29	0.30	0.00	0.30	0.31	0.30	0.00	0.00	0.27	0.00	0.00
Safety, health, and welfare	0.29	0.31	0.00	0.31	0.32	0.31	0.00	0.00	0.27	0.00	0.00

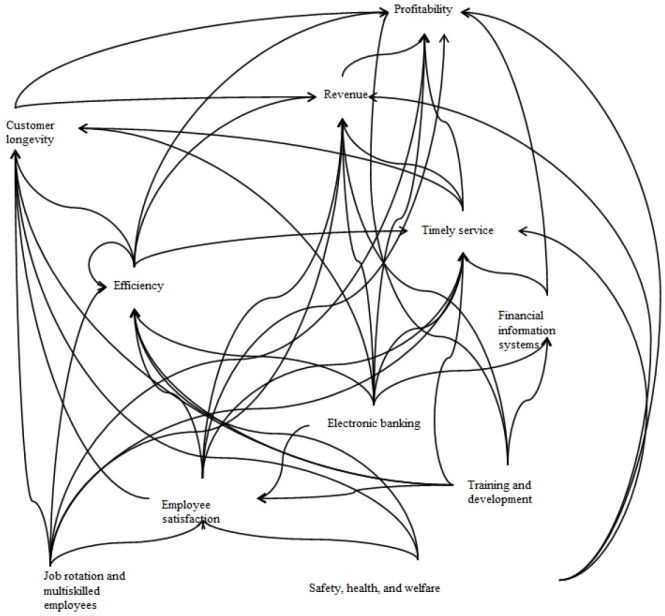

Figure 3: Causal relationship between factors evaluating the performance of the banking system

4 Discussion and conclusion

In the present study, not only are the factors evaluating the performance of the Iranian banking system identified comprehensively and in a large range of the bank and its various activities, but also causal relationships between them are determined. Almost all factors are directly or indirectly related to each other, and a network of such relationships is extracted. In other words, it can be said that the change in one of the factors will gradually change the other factors. In most previous research, financial and economic factors have been emphasized, and the relations between them have been considered. This research is based on the empirical inference of experts from the bank, but it is possible to rely on indicators extracted from evaluation factors and using real data and evidence, from various statistical approaches such as time series and econometrics to extract such relationships. In many similar studies, the examination is conducted in the context of limited relationships. Although, despite the increase in the threshold value, many relationships remained, and the final graph consisted of a large number of tangled lines, it is possible to easily observe and calculate the causal effects using organizational systems analysis software. The findings of this study are comparable to the results of many previous studies, including Rashid et al. [16] and Wu et al. [21]. In the study of Rashid et al. [16], contrary to what was expected, no significant relationship was found between customer longevity and financial performance, but in the present study, most factors were directly related to financial performance in the form of revenue and profit factors. At the same time, the findings of the present study are to some extent consistent with the results of Wu et al. [21]. Also, in joint sections with the study conducted by Mohammadpour Zarandi et al. [13], a good adaptation can be inferred. In the study of Mohammadpour Zarandi et al. [13], the factors of change and strategies that lead to planned change in the organization are mentioned. The findings of the present study are largely consistent with the results reported by Kasgari and Soodbakhsh [7]; however, the present study is comprehensive and does not limit itself to a specific classical model such as total quality management. What distinguishes the present

research and findings is the emphasis on the status of the factor at each point in time, and no particular program or operation is considered. However, the findings of this study can be used to formulate strategies and improvement measures in the form of a strategic master plan. Improvement can be understood and pursued more clearly and concretely when appropriate indicators are identified for each of the evaluation factors and a specific system for data collection and analysis, and, if necessary, pathology and rehabilitation are institutionalized.

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