

## Performance evaluation and ranking of direct sales stores using BSC approach and fuzzy multiple attribute decision-making methods

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### ABSTRACT

In an environment where markets go through a volatile process, and rapid fundamental changes occur due to technological advances, it is important to ensure and maintain a good performance measurement. Organizations, in their performance evaluation, should consider different types of financial and non-financial indicators. In systems like direct sales stores in which decision units have multiple inputs and outputs, all criteria influencing on performance must be combined and examined in a system, simultaneously. The purpose of this study is to evaluate the performance of different products through direct sales of a firm named Shirin Asal with a combination of Balanced Scorecard, fuzzy AHP and TOPSIS so that the weaknesses of subjectivity and selective consideration of evaluators in evaluating the performance indicators are reduced and evaluation integration is provided by considering the contribution of each indicator and each indicator group of balanced scorecard. The research method of this case study is applied. The data collection method is a questionnaire from the previous studies, the use of experts' opinions and the study of documents in the organization. MATLAB and SPSS were used to analyze the data. During this study, the customer and financial perspectives are of the utmost importance to assess the company branches. Among the sub-criteria, the rate of new customer acquisition in the customer dimension and the net income to sales ratio in financial dimension are of the utmost importance.

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## 1. Introduction

Because of increasing expansion and complexity of profit and non-profit entities in today's modern world, pressure due to shortage of resources and increased competition, all kinds of risks in the financial, administrative and commercial fields, which are threatening organizational objectives and policies from inside and outside, the performance of such units should be evaluated reasonably, and there is a need for a performance measurement system that is more mature than what was previously available (Shahmoradi, 1992).

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Performance evaluation is one of the main tasks of any organization and is one aspect of performance management, which in the past was implemented through the use of financial indices (Wong et al., 2006). During the last two decades, topics such as organizational learning, knowledge creation and innovation capacity have been considered as determinants of competitive advantage due to the advent of globalization, increased competition, and unprecedented technological progress, especially in the field of communication and information (Amy et al., 2008; Yeo, 2003). With the expansion of organizations, the need for control becomes even more important. One of the major problems in most organizations, especially those with different branches, is that no valid and logical performance evaluation method has been presented for them. Up to this time, in different industries, various models have been used for performance evaluation, each of which has a different vision for analysis of various organizational dimensions. An efficient model in this area is Balanced Scorecard (BSC), which examines all aspects of an organization in a balanced manner. In this research, by considering the strengths of BSC in performance evaluation, a combination of BSC with fuzzy multi-criteria decision-making technique and TOPSIS is used for performance evaluation and ranking of different branches of Shirin Asal stores. From a functional viewpoint, the research results can be used to rank branches for optimal resource allocation, development or modification of an appropriate reward system in the organization, evaluation of branch managers, and formulation of new organizational strategies for branch functions.

## **2. Problem statement**

The BSC is also utilized as a framework to develop evaluation indicators for organization performance (Davis & Albright, 2004; Kim & Davidson, 2004; Kuo & Chen, 2008). Although BSC makes performance evaluation multidimensional, instead of focusing solely on financial criteria, items such as the massive amount of information needed and bias judgments make performance evaluation process complicated (Chan, 2006). To overcome the complexity of performance evaluation in BSC, the multi-criteria decision-making techniques would be an appropriate tool (Bentes et al., 2012). On the other hand, given that BSC does not specify the relative importance of attributes, and according to the researchers inaccuracies and selective attention are the BSC characteristics, we use analytical hierarchy process (AHP) to fix this problem. In addition, since the weight of each attribute is obtained through managers' consensus, the impact of selective attention of managers, which is due to awareness or lack of awareness on a specific attribute and leads to higher or lower importance for that attribute, is neutralized. Thus, the use of a quantitative technique like AHP can be appropriate. Since the expert opinions on the relative importance of attributes are applied in a relative and inaccurate manner, fuzzy concepts should be used in this research. One of the greatest multi-criteria decision-making approaches is Analytical Hierarchy Process (AHP), which focuses on obtaining the relative weights of general factors and values of each option based on weights (Torfi et al., 2010). Compared with other multi-criteria decision-making methods, AHP has been very successful in multi-criteria decision-making and many other decision problems. Despite its fame, AHP has been criticized mainly due to the inability to deal with inaccurate and uncertain decision problems (Cheng, 1999; Torfi et al., 2010). Fuzzy Analytical Hierarchy Process (FAHP) method has many applications in various decisions at micro and macro levels. This method is one of the mathematical model for multivariate decisions, which combines AHP and fuzzy theory to improve results and reliability (Mousavi, 2015). TOPSIS can be used to rank and compare different options and select the best option and determine the distance between options. It is based on the idea that the selected option should have a minimum distance from the positive ideal solution (the best possible case) and maximum distance from the negative ideal (the worst possible case) (Saghafian & Hejazi, 2005).

This research aims to use FAHP to solve the problem of weighting the perspectives and attributes of performance evaluation with the BSC approach in stores through a hierarchical framework and pairwise comparisons resulted from the standard analytical hierarchy questionnaires distributed among decision experts, so that a better performance evaluation is done by determining the contribution and priority of each attribute.

### 3. Theoretical foundations and literature review

#### 3.1. Theoretical foundations

##### 3.1.1. Performance evaluation

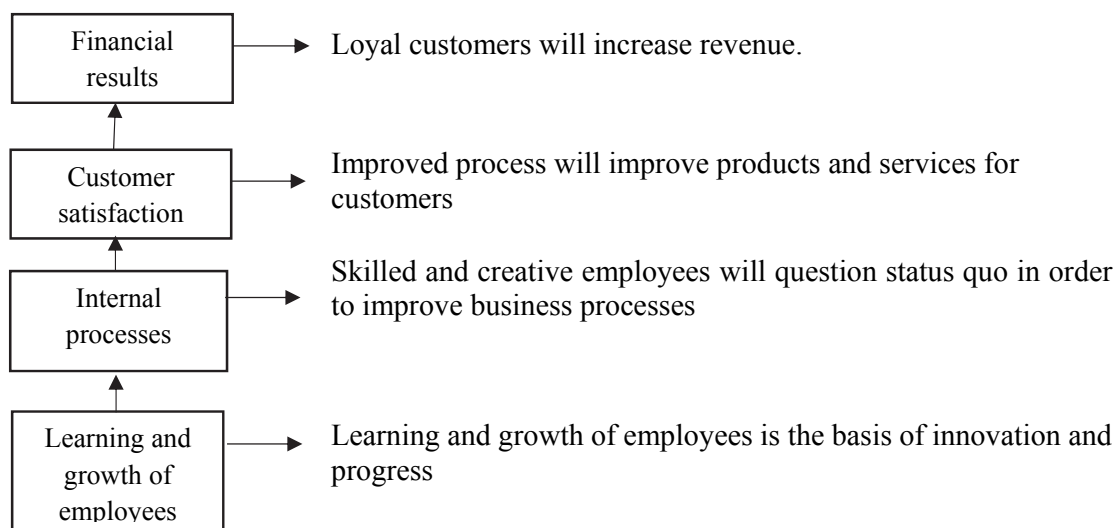
Performance evaluation process assesses progress towards the achievement of preset goals and includes information on the efficiency of transformation of offered products and services and customer satisfaction, achievements, and effectiveness of activities in line with specific goals (Sattari fard, 2004).

Simons (2004) believes that performance control and measurement systems and official affairs and procedures of information are an axis that managers use to maintain or modify organizational activity patterns. According to this definition, any performance evaluation system has four main goals:

1. The goal of all performance control and measurement systems is to transfer information.
2. Performance control and measurement systems show formal affairs and procedures.
3. Performance control and measurement systems must be designed for managers.
4. Managers use performance control and measurement systems to maintain or modify organizational activity patterns (Simons, 2000).

##### 3.1.2. BSC model

Today's organizations have realized that 80% of their values is created through intangible assets, including human capital (knowledge and skills of employees), organizational capital (organizational culture and values governing it) and intelligence assets (sources of information and statistical data), and they no longer perform comprehensive performance evaluation by relying on tangible assets (Kaplan & Norton, 2004, 2008). Kaplan and Norton, by understanding the requirements of modern organizations and for effective implementation of strategy and creation of a comprehensive system of performance improvement and management, introduced a new management system in 1992 called Balanced Scorecard (BSC). The BSC management system, as a comprehensive framework of performance evaluation and strategy progress, establishes a balance between short- and long-term goals. BSC is a proven framework that explains and implements organizational strategy (Niven, 2006; Creelman & Makhijani, 2008).



**Fig. 1.** Analysis of the relationship between the four dimensions of BSC (Kaplan & Norton, 2004)

### 3.1.2.1. Advantages of BSC

Expected advantages of BSC include:

- Transfer of strategy across the organization;
- Better relationship of organizational and personal goals with the reward policy;
- Improved strategic learning (control and feedback);
- Broadening the cause and effect understanding between performance criteria of managers and empowering them for making strategic decisions;
- Creating a balance between internal and external performance and financial and non-financial criteria;
- Flexibility and compatibility with any organization (Yongvanich & Guthrie, 2009).

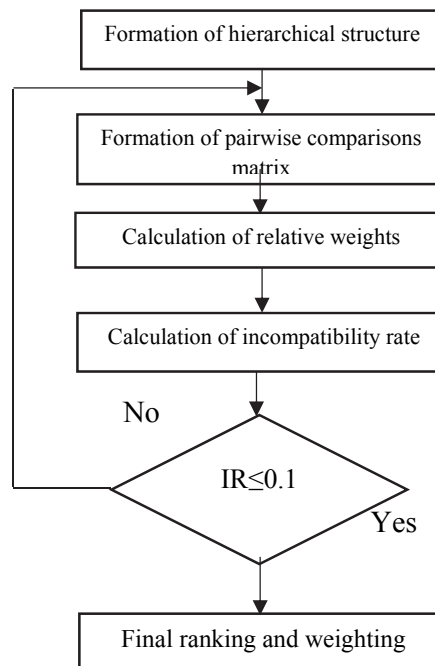
### 3.1.2.2. Disadvantages of BSC

Some disadvantages of this method include:

- It lacks a weighting system;
- It does not consider the views of shareholders and other external stakeholders in stressing the formulation and implementation of strategies;
- Interrelations between fields are not clear;
- The BSC attributes are inaccurate, subjective and linguistic, inappropriate models are used for evaluation;
- Users integrate the results subjectively (Lipe & Salterio, 2002).

### 3.1.3. Fuzzy Analytical Hierarchy Process (FAHP)

FAHP is one of the most well-known multi-attribute decision-making techniques, which was introduced by Saati in the 1970s.



**Fig. 2.** AHP steps (Mehregan, 2013)

It formulates the problem in a hierarchical manner and also considers various qualitative and quantitative criteria. This process, which is based on pairwise comparisons, can involve various options in decision-making and also can do the sensitivity analysis on the criteria and sub-criteria. One of its advantages is that one can calculate the compatibility and incompatibility rates of the decision. In addition, it enjoys a strong theoretical basis and is based on self-evident principles (Ghodsi pour, 2016).

The use of fuzzy sets is more compatible with linguistic and sometimes vague human descriptions, and therefore, it is better to use fuzzy sets (fuzzy numbers) for long-term prediction and decision-making in the real world (Beynon et al., 2004).

In normal AHP, opinions of decision-makers are expressed as a crisp number, but it may not be possible because of the ambiguity and uncertainty in the assessment; because many criteria are inherently subjective and qualitative, and it is impossible for the decision-maker to assign them a qualitative, crisp number for evaluation. For this reason, decision-makers prefer to use range or fuzzy numbers for this purpose (Zanjirchi, 2011).

#### 3.1.4. TOPSIS method

The Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS), which was originally developed by Hwang and Yoon in 1981, is a multi-criteria decision-making method. It can be used to rank and compare various options and select the best option, determine the distance between options and group them. One advantage of this approach is that the attributes or criteria used for comparison can have various units of measurement and positive and negative nature; in other words, one can use positive and negative attributes in an ordinal manner in this technique (Mehregan, 2013).

TOPSIS is based on selecting the best option, which has the shortest distance from the positive ideal solution (option) and the longest distance from the negative ideal solution (option). The positive ideal solution maximizes profit criterion and minimizes cost criterion. The negative ideal solution maximizes cost criterion and minimizes profit criterion (Kelemenis & Askounis, 2010).

#### 3.2. Literature review

Tsai et al. (2008) combined analytical network process (ANP) and TOPSIS for performance evaluation of insurance companies in Taiwan. They used ANP to reach criteria weights and used TOPSIS to rank the results of the previous stage in insurance companies. In addition, for determining their criteria, they considered non-financial factors, such as the quality of insurance services and customer satisfaction.

Lee et al. (2008) evaluated the performance of IT department in Thailand's manufacturing industries with the FAHP and BSC approaches. They emphasized that the evaluation of IT department is a crucial step for understanding how it participates in achieving strategic and organizational goals, because the IT department performs many tasks, which cannot simply be measured in hard currencies, and it is not sufficient to be evaluated with methods that solely rely on financial measures. Results provide guidance on performance improvement strategies for the IT department in manufacturing industries in Thailand.

Wu et al. (2009) integrated fuzzy multi-attribute decision-making methods and the BSC framework to evaluate and compare the performance of three banks in Taiwan. Results are as follows:

- a. A total of 23 performance evaluation attributes were determined among many attributes as the most important attributes according to banking experts.
- b. These attributes were divided based on four BSC perspectives.
- c. For attribute weighting, FAHP was used and "customer satisfaction" was obtained as the most important performance attribute.

- d. For ranking banks, multi-attribute decision-making TOPSIS methods were used, and weak attributes of banks were specified.

Yüksel and Dağdeviren (2010) determined the performance level of a business based on an integrated model of BSC and FANP based on its perspectives and strategies. The proposed model showed that different measurement units, which are related to performance attributes under BSC or other performance attributes, can be integrated with FANP. This model can assess business performance from the perspective of a strategy both with previous results and current, ongoing attributes. Iravani Tabrizi et al. (2012) conducted a descriptive/cross-sectional study. In their study, first, a list of performance evaluation attributes was developed with the BSC approach, and pairwise comparisons from the field method and distributed standard hierarchical analytical questionnaire were obtained at a compatibility rate lower than 0.1 among seven decision experts. Then, through FAHP, the weights of attributes and perspectives were obtained. Among the BSC perspectives, the community stakeholders and service area perspective with 28.11 percent had a slight lead over other perspectives. Moreover, among attributes, the satisfaction of patients, entourage, and learners had the highest importance in the hospital performance. The final score of performance in 2010 was calculated to be 95.88 percent. Bentes et al. (2012) evaluated three functional units of an organization according to the BSC perspectives. They proposed a nine-stage algorithm for this purpose and defined appropriate sub-criteria for each criterion in order to evaluate the performance of units. Ansari et al. (2016) combined BSC and fuzzy multi-criteria decision-making methods for assessing and ranking the municipalities of Qazvin. After extracting attributes from the book of Kaplan and Norton, and gathering expert opinions, they finally selected 52 attributes. The attributes were relatively weighted by FAHP, and municipalities were ranked by fuzzy TOPSIS, and the best municipality was determined.

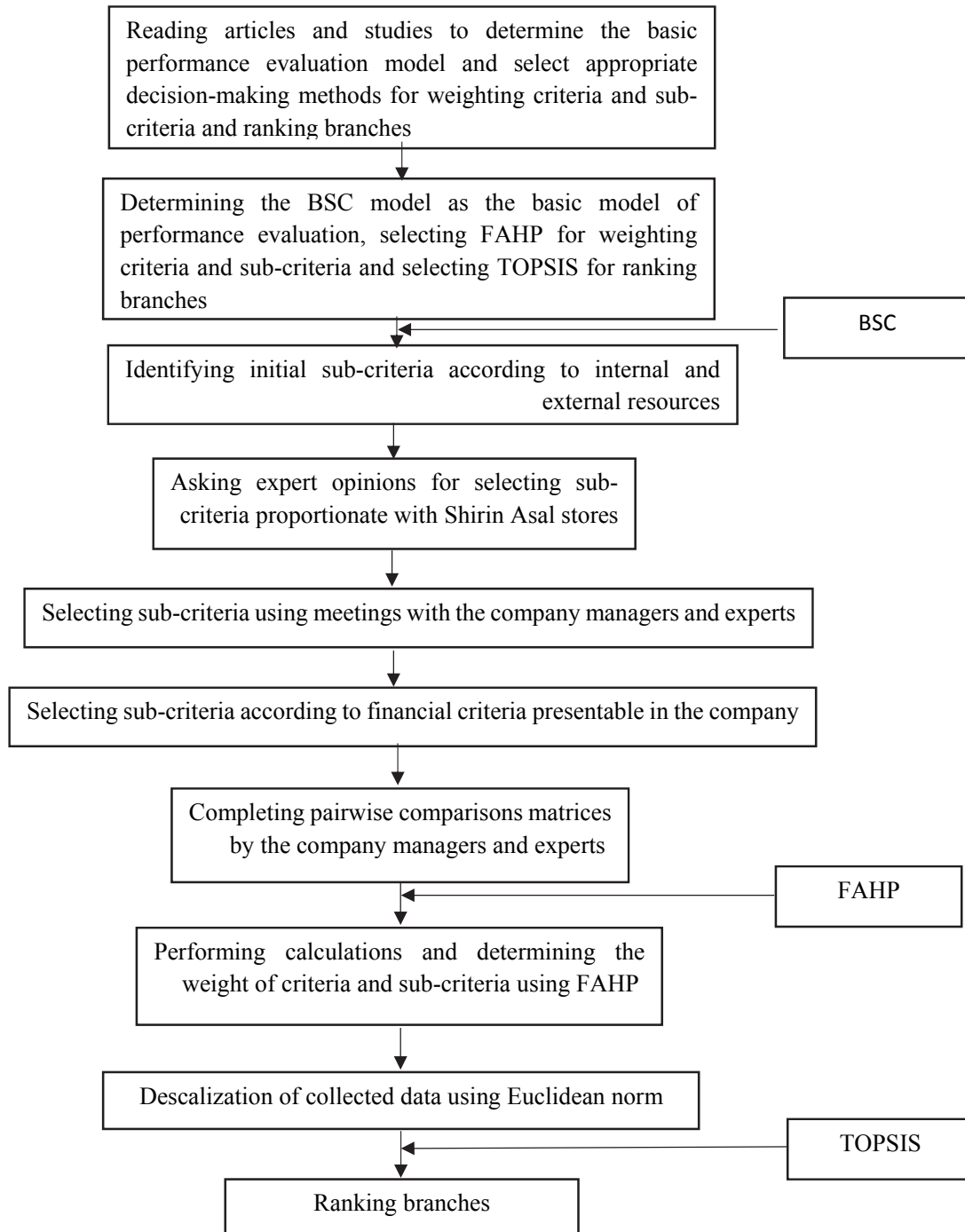
#### 4. Research method

In this research, through reading articles and studies on the performance evaluation of organizations and holding meetings with the experts of financial units, deputy manager, internal managers, director and supervisors of different sales sections, and head of the branch coordination department, we determined sub-criteria for each of the four main criteria of BSC. As a result, 47 initial sub-criteria were identified. After consulting with experts in the industry, sub-criteria were assessed in terms of achievability and relevance, and some changes were made in them. At the next stage, during a meeting with the CEO and then separate meetings with deputy manager, sales management and branch managers of Shirin Asal Company, 21 sub-criteria were finalized, as shown in Table 1.

**Table 1**  
Final criteria extracted by experts

Customer dimension	Financial dimension	Internal processes dimension	Learning and growth dimension
Customer satisfaction	Return on sales	Standard processes and forms	Impact of experience and skills of employees and empowering them
Customer loyalty	Current ratio	Organization's efforts to recruit and attract trained, specialized human forces	Impact of in-service training of employees in empowering them
Number of customers	Net income to sales ratio	Improvement of customer relationship	Impact of job satisfaction on employee satisfaction
Rate of new customer acquisition	Corporate debt	Targeted advertising	Impact of appropriate compensation in employee satisfaction
Handling customer complaints	Financial efficiency: earnings to the number of personnel ratio		Impact of boss satisfaction on employee satisfaction
Identifying key customers			Impact of the use of new technologies on employee performance

Fig. 3 indicates the research stages.



**Fig. 3.** Research stages

The statistical population includes managers and staff of 35 Shirin Asal stores in Tehran. In the questionnaire set to collect data on the sub-criteria, the part related to managers was completed by total population (all 35 branch managers), but in the learning and growth part, which was supposed to be completed by employee, relative random sampling was used (one person from each branch and a total of 35 people from all branches). To collect information on the importance of identified criteria and sub-criteria, the pairwise comparisons questionnaire was designed, and branch managers were asked to complete it. For this purpose, 35 questionnaires were prepared based on a nine-option valuation, in

which people were asked to answer questions like "Which criteria should be considered in performance evaluation? and How much more?" according to Table 2.

**Table 2**

The pairwise comparison scale (Saaty, 1990)

Intensity of Importance	Definition	Explanation
1	Equal Importance	Two elements contribute equally to the objective
3	Moderate Importance	Experience and judgement moderately favor one element over another
5	Strong Importance	Experience and judgement strongly favor one element over another
7	Very Strong Importance	One element is favoured very strongly over another; its dominance is demonstrated in practice
9	Extreme Importance	The evidence favouring one element over another is of the highest possible order of affirmation
2, 4, 6, 8	Intermediate values between the two adjacent judgements	When compromise is needed

Finally, FAHP was used to determine the importance and weight of criteria, and TOPSIS was used to rank the branches.

## 5. Research findings

### 5.1. Criteria weight

After collecting the pairwise comparisons questionnaires completed by the branch managers and normalizing the pairwise comparisons matrix, the normalized weights of sub-criteria for each of the main criteria were obtained, as seen in the tables below.

**Table 3**

Weights for customer criteria

Criteria	Index	Initial weight	Final weight
Customer	Customer satisfaction	0.113738917	0.057207995
	Customer loyalty	0.191645927	0.096393386
	Number of customers	0.063914944	0.032147711
	Rate of new customer acquisition	0.416960592	0.209721354
	Handling customer complaints	0.312572388	0.157216547
	Identifying key customers	0.042074705	0.021162585

**Table 4**

Weights for financial criteria

Criteria	Index	Initial weight	Final weight
Financial	Return on sales	0.295383666	0.091407
	Current ratio	0.165950396	0.051354
	Net income to sales ratio	0.497973874	0.154099
	Corporate debt	0.109218825	0.033798
	Financial efficiency: earnings to the number of personnel ratio	0.074485144	0.02305

**Table 5**

Weights for internal processes criteria

Criteria	Index	Initial weight	Final weight
Internal processes	Standard processes and forms	0.114196234	0.01304078
	Organization's efforts to recruit and attract trained, specialized human forces	0.502976439	0.057438015
	Improvement of customer relationship	0.309452043	0.035338258
	Targeted advertising	0.201650508	0.023027729



**Table 6**  
Weights for learning and growth criteria

Criteria	Index	Initial weight	Final weight
Learning and growth	Impact of experience and skills of employees and empowering them	0.446566632	0.09005
	Impact of in-service training of employees in empowering them	0.101384422	0.020444
	Impact of job satisfaction on employee satisfaction	0.27469731	0.055393
	Impact of appropriate compensation in employee satisfaction	0.178957581	0.036087
	Impact of boss satisfaction on employee satisfaction	0.052499957	0.010587
	Impact of the use of new technologies on employee performance	0.073128145	0.014746

Normalized weights for each of the main BSC criteria, which are equal to the sum of the net weight of sub-criteria for each sector, are given in Table 7.

**Table 7**  
Normalized weights for each of the main BSC criteria

Criteria	Weight
Customer	0.452976439
Financial	0.271452043
Internal processes	0.181650508
Learning and growth	0.104196234

As can be seen, the highest weight is for the customer criterion. From managers' opinions, it is concluded that the customer, financial, internal processes and learning-and-growth criteria are more important. Moreover, the rate of new customer acquisition and handling customer complaints sub-criteria were recognized as the most important attributes of branch performance evaluation in the customer dimension, the net income to sales ratio as the most important attribute of branch performance evaluation in the financial dimension, impact of experience and skills of employees in empowering them as the most important attribute of branch performance evaluation in the internal processes dimension, and recruitment and attraction of specialized human forces as the most important attribute of branch performance evaluation in the learning and growth dimension.

## 5.2. Positioning each branch for performance evaluation and ranking

### 5.2.1. TOPSIS algorithm and ranking stores

#### 5.2.1.1. Formation of decision matrix

In TOPSIS,  $m$  options are evaluated using  $n$  criteria. Thus, each option is scored based on each criterion. These scores can be based on actual and qualitative values or theoretical and quantitative ones. In any case, a  $m \times n$  decision matrix should be formed. The TOPSIS steps are as follows:

#### 5.2.1.2. Normalizing the decision matrix

Like other multi-criteria decision-making methods, the decision matrix should be normalized. The vector method is used to normalize values. Unlike the simple linear normalization method, the vector method is done according to Eq. (1):

$$n_{ij} = \frac{x_{ij}}{\sqrt{\sum x_{ij}^2}} \quad (1)$$

### 5.2.1.3. Formation of weighted normalized decision matrix

In this step, the weighted normalized matrix is formed based on the criteria weights. Thus, criteria weights should be calculated in advance using a technique, such as AHP or Shannon entropy. Weighting is very simple (the weight of each criterion is multiplied by the elements of that criterion).

### 5.2.1.4. Calculating positive and negative ideals

In this step, PIS<sup>1</sup> and NIS<sup>2</sup> are calculated. Here, a positive ideal and a negative ideal are calculated for each attribute.

### 5.2.1.5. Distance from positive and negative ideals and calculating ideal solution

In this step, the relative proximity of each option to the ideal solution is calculated.

### 5.2.1.6. Calculating ideal solution

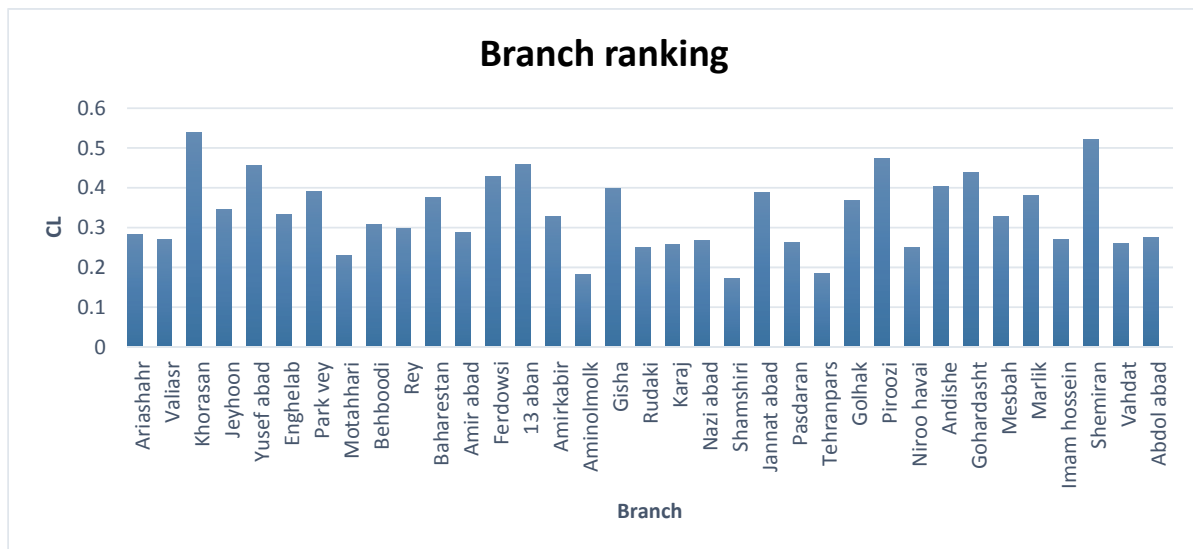
In the final step, the ideal solution is calculated. Here, the relative proximity of each option to the ideal solution is calculated, using Eq. (2):

$$d_i^+ = \sqrt{\sum_{j=1}^n (V_{ij} - V_j^+)^2}$$

$$d_i^- = \sqrt{\sum_{j=1}^n (V_{ij} - V_j^-)^2}$$

$$CL_i^* = \frac{d_i^-}{d_i^- + d_i^+}. \quad (2)$$

The CL value is between zero and one. The closer the value to one, the solution will be closer to the ideal solution and will be a better solution.



**Fig. 4.** Branch ranking using TOPSIS

<sup>1</sup> Positive Ideal Solution

<sup>2</sup> Negative Ideal Solution

After analyzing the data collected from completed questionnaires using programmed MATLAB and gathering required financial data, given the non-uniformity of the scales of collected data, collected data were normalized using Euclidean norm descalization method for adaptability purposes. Average values of variables for each sub-criterion forms its score. Table 8 represents the final normalized table.

**Table 8**  
Final normalized table

Branch code	Branch name	d <sup>+</sup>	d <sup>-</sup>	CL	Ranking
S1	Ariashahr	0.106264	0.042046	0.2835	22
S2	Valiasr	0.106304	0.039307	0.269944	25
S3	Khorasan	0.073839	0.086188	0.538586	1
S4	Jeyhoon	0.096464	0.051	0.345849	15
S5	Yusef abad	0.091933	0.076918	0.455538	5
S6	Enghelab	0.090472	0.04536	0.33394	16
S7	Park vey	0.092741	0.05962	0.391307	10
S8	Motahhari	0.109157	0.032736	0.230707	32
S9	Behboodi	0.103838	0.046347	0.308597	19
S10	Rey	0.10004	0.042468	0.298007	20
S11	Baharestan	0.09337	0.056087	0.375274	13
S12	Amir abad	0.106202	0.042703	0.286782	21
S13	Ferdowsi	0.083791	0.062751	0.428213	7
S14	13 aban	0.080057	0.067898	0.45891	4
S15	Amirkabir	0.102612	0.050391	0.329348	17
S16	Aminolmolk	0.119374	0.02647	0.181496	34
S17	Gisha	0.083339	0.055158	0.398263	9
S18	Rudaki	0.103914	0.034488	0.249185	31
S19	Karaj	0.105329	0.036445	0.257063	29
S20	Nazi abad	0.106285	0.038923	0.26805	26
S21	Shamshiri	0.118694	0.024597	0.171655	35
S22	Jannat abad	0.093232	0.059105	0.387991	11
S23	Pasdaran	0.108812	0.038799	0.262846	27
S24	Tehranpars	0.119419	0.027066	0.184773	33
S25	Golhak	0.090188	0.05268	0.36873	14
S26	Piroozi	0.076066	0.068769	0.474808	3
S27	Niroo havai	0.112191	0.037524	0.250634	30
S28	Andishe	0.09186	0.062398	0.404506	8
S29	Gohardasht	0.088013	0.068965	0.439331	6
S30	Mesbah	0.096631	0.046921	0.326859	18
S31	Marlik	0.096818	0.059305	0.379861	12
S32	Imam hossein	0.106087	0.039512	0.271375	24
S33	Shemiran	0.076711	0.083313	0.520628	2
S34	Vahdat	0.106802	0.037527	0.26001	28
S35	Abdol abad	0.113675	0.04334	0.276027	23

## 6. Conclusion

Performance evaluation is one of the main tasks of any organization, which was done in the past often using financial criteria. On the other hand, as organizations become larger, they need more control. The basic issue today in many organizations with different branches is that no valid and logical performance evaluation method has been proposed for them. The aim of this study is to provide a model for performance evaluation of branches of an organization in the field of food industry stores using a combined model of BSC, FAHP, and TOPSIS. For this purpose, after reviewing previous studies and determining initial sub-criteria for each BSC dimension, meetings with the company managers and experts were held to eliminate and modify the sub-criteria. Next, through sending pairwise comparisons questionnaires for managers, the weights of criteria and sub-criteria were obtained according to expert opinions using FAHP. Data on sub-criteria for each branch were collected in two phases: gathering reliable data in the organization (e.g., financial data in the balance sheet) and a questionnaire distributed

among employees of branches. Finally, using TOPSIS, Shirin Asal stores were ranked, as shown in Fig. 1. The output of final ranking of criteria and sub-criteria used in performance evaluation of Shirin Asal branches is given in Table 9.

**Table 9**

Output of final ranking of criteria and sub-criteria used in performance evaluation of Shirin Asal branches

Rank	Customer dimension (1)	Financial dimension (2)	Internal processes dimension (3)	Learning and growth dimension (4)
1	Rate of new customer acquisition	Net income to sales ratio	Organization's efforts to recruit and attract trained, specialized human forces	Impact of experience and skills of employees and empowering them
2	Handling customer complaints	Return on sales	Improvement of customer relationship	Impact of job satisfaction on employee satisfaction
3	Customer loyalty	Current ratio	Targeted advertising	Impact of appropriate compensation in employee satisfaction
4	Customer satisfaction	Corporate debt	Standard processes and forms	Impact of in-service training of employees in empowering them
5	Number of customers	Financial efficiency: earnings to the number of personnel ratio		Impact of the use of new technologies on employee performance
6	Identifying key customers			Impact of boss satisfaction on employee satisfaction

According to the results, the customer and financial criteria have a far greater importance than the other two criteria (internal processes and learning-and-growth).

According to the results, the S3 branch (Khorasan Square) ranked first because it had a high score in the customer dimension and a moderate-to-high score in the two dimensions of learning-and-growth and internal processes; as a result, it is expected that it can maintain its good standing in terms of profitability over other branches. On the other hand, S21 branch (Shamshiri) has a moderate score in the customer and internal processes dimensions compared with other branches, but weak financial performance and learning-and-growth led to the lowest rank for it. The method shows us that each branch is weak in which dimensions and strong in which ones. This output can be a good guide for understanding weaknesses of the organization and putting them on the path to growth.

Shirin Asal Company can use these rankings to make decisions for improving the performance of branches with low rankings. For example, in order to increase the number of customers, it can take promotional measures or consider discounts on products and strengthen weak sub-criteria.

## 7. Recommendations for future research

It is recommended that this research is accomplished in the period of 4 to 6 months with increased or decreased criteria so that branches with higher and lower ranks in all periods can be identified and thus, strengths and weaknesses can be identified more reliably. In addition, problems and weaknesses can be identified during the year, and planning can be made for the rest of the year. In order to meet the scarcity of staff training hours, it is suggested to consider virtual learning methods and correspondence courses. Moreover, by offering incentives, branches can be encouraged to identify training needs, and attempt to meet these needs. Besides, thorough and accurate need assessment of branches and development of training needs for all branches can help in the training standardization of all branches. Researchers are also recommended to use more attributes in decision-making, if possible. This way, more decision-making power and more accurate results are obtained. It is also suggested to use other performance evaluation methods and hybrid models and compare the results with previous studies.

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