

## ARTICLE

# SELECTION OF THE MOST APPROPRIATE MARKETING COMPETITIVE STRATEGY WITH COMBINING SUSTAINABLE BALANCED SCORECARD (SBSC) AND MULTIPLE CRITERIA DECISION MAKING (MCDM)

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## ABSTRACT

Because of the limited organizational resources and intense competitive atmosphere, organizations are obliged to use the most appropriate strategies to achieve their goals. Tejarat Bank as one of the major banks of the country isn't an exception and has tried to codify and choose the most appropriate marketing competitive strategy. Thus the research questions are: What are Tejarat Bank decision-making criteria based on SBSC for strategy selection? What is the most important factor of Tejarat Bank design making for marketing competitive strategy selection? What is the most appropriate marketing competitive strategy (differentiation, focus, and leadership in the price Strategy) for Tejarat Bank? Also the independent variables of present research included those criteria (Sustainable Balanced Scorecard factors) upon which a marketing competitive strategy might be selected: financial, customer, internal processes, learning and growth, Social and environmental factors. Besides, the dependent variables of marketing competitive strategy were differentiation, focus, and leadership in price strategy. In this research, the biased sampling method was used. The final goal of this research was to prioritize and select a better strategy. Data collection tools in this research included the Tomas Saaty Pairwise comparisons questionnaire which was filled by 15 managers and specialists and calculated by Expert Choice and AVP-Supers software. Also, the Calculator Pro Matrix Software was used to calculate the matrix. Having identified the criteria, it was attempted to determine the criteria weights using the Analytical Network Process and so the financial factor with 0.298326 had the highest priority. Finally and according to the obtained scores, the "differentiation strategy" with the total scores 0.465 was selected as marketing competitive strategy for Tejarat Bank

## INTRODUCTION

**KEY WORDS**  
Marketing competitive strategy, Multi-Criteria Decision Making (MCDM), Sustainable Balanced Scorecard (SBSC)

In this research, design-making criteria identified by Sustainability Balanced ScoreCard (SBSC) and then has been seen as a complicated design-making tool by using of the Multi-criteria design-making (MCDM) that contains quantitative and qualitative factors and the most priority strategy was selected between marketing competitive strategies (differentiation, focus, and leadership in price).

Choosing an appropriate strategy is complicated even perilous. Because each strategy conducts organization in a specified competitive environment and determines how the managers should plan for adapting the organizational strengths and weaknesses with environmental threats and opportunities. Always the selection of the most important strategies (with considering of the limited organizational resources and costly of strategies) that have worthiness to allocate the resources, is the main challenge of the managers. In according to the changing environment, to have an appropriate strategy couldn't help to continue surviving and obtaining the competitive advantage. So in the different periods, should be applied the different strategies for the organizational survive. The strategy isn't a plan but also is an attitude that its bias focuses on the diagnosis of the main opportunities and realizing the potential benefits. The purpose of the codifying of the strategy is to determine the company mission, to identify internal strengths and weaknesses, setting the long-term goals, considering the various strategies and selecting the specific strategy to continue the activity.

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## Problem statement

In the today's competitive world certainly, can be stated that each strategy is not appropriate for all organizations. If a strategy is appropriate and effective for an organization, will not necessarily useful for the other organizations. Consistent with the global trend of the rising of the interest in using the tools and techniques of strategic management, in our country, for reasons including privatization and preparation for joining the World Trade Organization, The need for effective use of such tools is increasing. The available organizational resources are restricted. Unfortunately, most companies and institutions due to lack of suitable priority of indicators and criteria, lose a lot of their resources in each period and always choosing the most important and the most practical strategy (with considering of organizational resource constraints and costly strategies) that have worthiness to allocate the resources, is the main challenge of the managers. As mentioned above, due to limited resources and intense competition atmosphere, companies are obliged to use the right strategy to achieve their goals. Tejarat Bank as one of the largest banks is no exception and for establishing and improving own competitive position needs to develop a competitive strategy and choose the most appropriate marketing strategy. The functional aim of this study is to provide a method that with a combination (SBSC) and Multiple Criteria Decision Making (MCDM) can choose the most appropriate strategy. Therefore, the main question is to choose the most suitable competitive marketing strategy for Tejarat bank? And the side questions are the identification of Tejarat Bank decision-making criteria based on the SBSC? Which is the most important decision-making criterion of Tejarat

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Bank in the selection of the competitive marketing strategy? What is the priority of each marketing competitive strategy (differentiation, focus, and leadership in reducing the cost strategy)?

### Theoretical issues

#### Marketing Competitive Strategy

Michael Porter in 1980 suggested four marketing strategies that here, one of them was rejected. So the companies according to their circumstances and market conditions select one of three strategies that are as follows (Cutler, 2006)

**Leadership in reducing cost:** A company follows this policy will try to reduce own production and distribution costs. In this way, the fixed price is lower than competitors and has the advantage.

**Differentiation:** Based on that the similarities in the market and its resources cause the increasing of the competition in the market, we should seek to differentiate the goods or services. In addition, Bayot and heravi in 1997 said that the differentiation strategy pressure will cause the buyers and their interests will become a priority for the company, it should be noted that this will increase providing different services in a market.

**Focus:** According to this strategy, the company instead of the selection of the entire market as the target market, selects only small parts of it and focuses its activities on it.

**Moderation:** The companies that don't follow a certain policy, which means they want to implement all listed strategies together and at a moderate level, these companies are doomed to failure, according to Porter.

#### Balanced ScoreCard(BSC)

David Norton and Robert Kaplan in the 90 decades created a collection of indicators and named it Balanced ScoreCard. This collection that contains process indicators and final results, rapidly provide the comprehensive image of the function of organization for managers to calculate that how is organization's progress in achieving strategic goals. Kaplan and Norton for the universality of the indicators and perceive a clear picture of organization suggest that the managers collect data about the 4 perspectives in an adjusted note card and analyze it. The 4 perspective are: Financial perspective, customer perspective, internal business perspective, learning and growth perspective (Ali Ahmadi et al, 2003)

#### Sustainable Balanced ScoreCard

Sustainable Balanced Scorecard concept is derived from Balanced Scorecard (BSC) and two social and environmental issues are considered as two certain dimensions of a sustainable commerce (Vishou, 2011). For the elimination of some deficiencies of Balanced Scorecard, some things done such as providing SBSC model titled the Sustainable balanced scorecard by German scientists, Fige et al. based on what they have expressed in the sustainable Balanced Scorecard; they think this model is useful in the organizational assessment, considering society and organizational environment and evaluating the organizational performance for its sustainability. Thus they say in the performance evaluation should have existed the indicators to indicate how much an organization has been responsible for environment and society needs (Shahband Zade, 2007)

#### Multiple Criteria Decision Making (MCDM)

Multiple Criteria Decision Making as a part of Operation Research created and for to support the individual evaluation of performance criteria by decision makers has become to the computational and mathematical tools (Banaitiene et al. 2008; Behzadian et al.; 2012 & Zavadskas et al.; 2014) several studies have been done in order to develop of MCDM (Dadalo et al.; 2014 & Shyur and Shih; 2006 & Yazdani et al.; 2014). In the recent years, several studies also use of applications and tools of MCDM for problem-solving in different areas like engineering (Zavadskas et al.; 2014), science (the same) and technology (Bagocius et al.; 2014, Dadalo et al.; 2014 & Shyur and Shih; 2006 & Yazdani et al.; 2014). In the real world, the design making problems typically are uncertain in several aspects. Lack of information could lead to an unclear situation for the future of this system. It should be noted that non-deterministic phenomenon with statistics and probability theory is studied. However, in the various situations of everyday life; for evaluation, judgment, and decision-making, in most cases, we use the natural language to explain the thinking and subjective assessments. In the natural languages, maybe the words haven't clear and well-defined meaning. As a result, if the words are used as a label for a set, the set boundaries that the objects may be or not belong to the set, will be fuzzy. Moreover, when people even judge by using the same word about an event, their views may differ significantly because each of them has different personalities or perception. To overcome this problem, fuzzy numbers be introduced in a way that helps to the linguistic variables that expressed properly. Due to the fact that investors often are evaluating investment strategies based on their subjective preferences based on different criteria numerical values, it is better that it be considered as a matter of fuzzy multi-criteria decision-making.

#### Develop or choose a strategy

In order to develop or choosing strategies or providing a strategic plan of an organization, in addition to the usual approaches and methods in decision making and planning, can be used different patterns and tools. Daft defines Porter's Competitive Forces and Strategies model (Porter's five competitive forces) and Miles and Snow's strategies topology as two frameworks for strategy formulation (Daft, 2010) from the Porter's perspective, the basis of developing the strategy is in competition and in his view, this competition is not only restricted to competitors within the industry and customers, raw material suppliers, new entrants and substitute products, all are forces that may be more or less prominent and active in terms of branches of industry. The aim of the strategist is the identifying the strength of these forces and find a position in the industry that can protect his/her institution in the best way against these forces and affect them (Quinn et al., 2003: 85) Among the different approaches that have been proposed for strategic decision-making, could be mentioned the eight-stage process provided by Violin and Hunger that there are successful experiences of the implementation in companies such as Warner-Lambert, Target, General Electric, IBM, Avon Products, Bechtel Group Inc and Taisei Corporation which in Figure 1 is shown. The eight main stages of the strategic decision making are as follows:

**Check the current status:** return on investment, profitability and so on the mission, goals, strategies, and current policies.

**Assessment of governmental relations:** in terms of performance and the relationship between the board and senior managers.

**Monitoring and evaluation of the external environment:** To determine the strategic factors that lead to opportunities and threats.

**Monitoring and evaluation of internal environment:** to determine the strategic factors that led to the strengths (especially the main advantages) and weaknesses.

**Analysis of strategic factors:** the precision in areas that have problems and revising the mission and objectives, if necessary.

**Produce, evaluate and select the best strategic option:** to clarify the procedure (and results) in the fifth stage.

**Implementation of the selected strategies:** through the programs, budgets, and procedure.

**Evaluating the implemented strategies:** through feedback systems and controlling the activities to reduce the deviation of the plan.

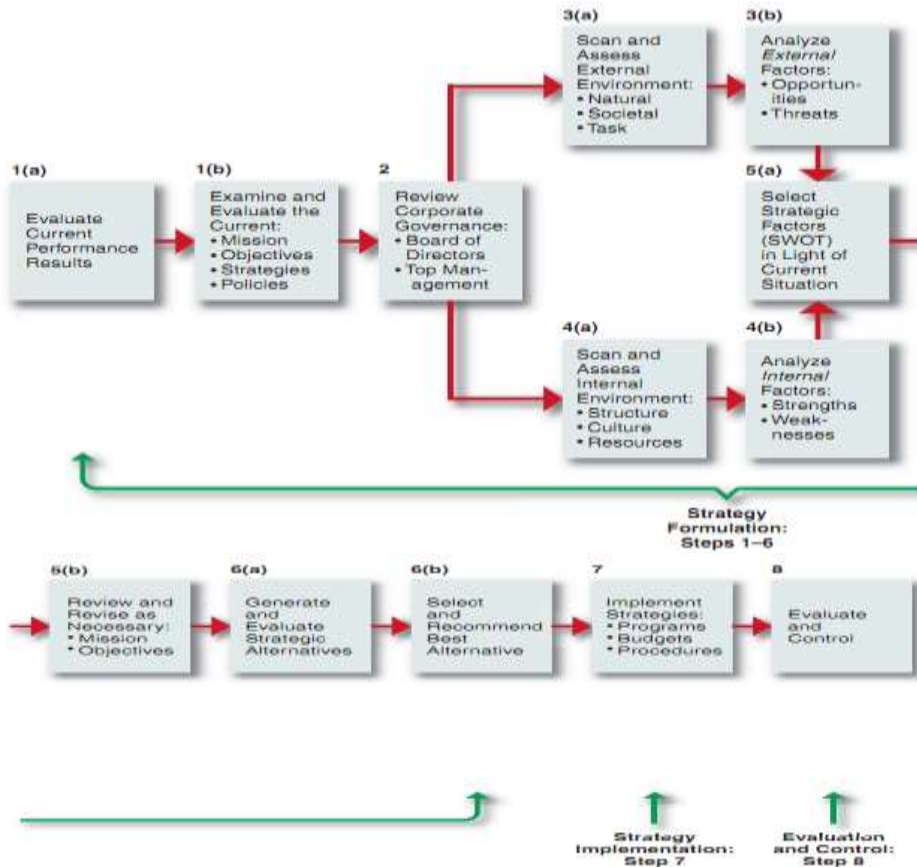


Fig. 1: strategic design making process (Vilen et.al; 2012)

Analytic network process

Analytic Network Process is one of the multi-criteria decision-making techniques known as Analytic Hierarchy Process or AHP has been developed, in which the hierarchy become to the network. In the AHP method, problems divided to the different level and the total levels establish a hierarchy. In this way, each element is linked to higher-level elements. It is also the main weakness of this method. Also, a number of

useful criteria in this system are limited (Saaty, 1999). Therefore, in view of the foregoing, Thomas L. Saaty has developed the generalized and improved AHP technique as titled Analytic Network Process. In this way the interaction between the levels of decision-making and decision criteria more broadly studied and considered. [Fig. 2] shows the hierarchical structure of Analytic Hierarchy Process with the internal correlation structure between elements or clusters in two methods of analysis network process (A) AHP and (B) ANP.

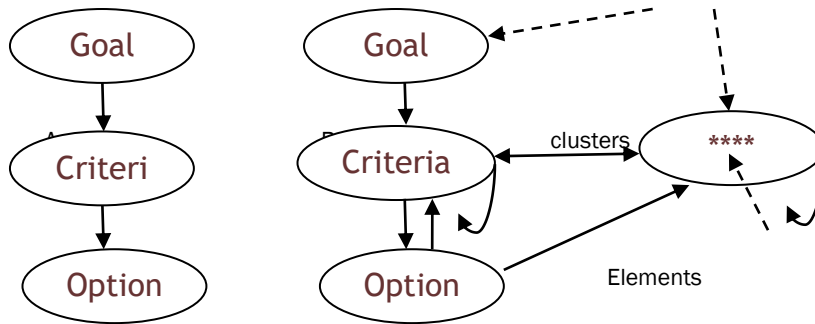


Fig. 2: the differences between ANP and AHP structures (Saaty, 1999)

### BACKGROUND OF THE RESEARCH

In this section has been tried after paying attention to a summary of studies from inside and outside the country about the prioritizing and strategy selection, the analytic network technique, also some descriptions of the variables and their results are presented. Saraee and dastmardi (2005) in their research entitled determining of design making criteria by Analytic Hierarchy Process selected appropriate strategy in fuzzy mode and concluded that between three offensive, defensive and stability strategies, the stability strategy has a priority than the other strategies. Moghani and Sarmad Saeedi (2009) tried to identify key factors and indicators as much as possible in sectors of product development in Saipa Group vehicles. Therefore by using of the pre-testing of 12 experts were determined 4 key factors included technology, marketing, trade and managing the product development team and by using AHP approach concluded that the marketing has the first rank, the product development team factor has the second rank, technology factor has the third rank and trade factor has the fourth rank in the product development process.

Samadi and Islam Fakher (2009), by using AHP technique (Case study: Ahwaz Pipe company), first considered different factors in the external environment and identified opportunities and threats, then with emphasis on financial and human aspects, have analyzed the company's internal environment due to determine the internal strengths and weaknesses and identified appropriate marketing strategies. Respectively the first to three priorities are product development, horizontal integration, and similar varieties.

Arefeh Rabbani (2014) in a study entitled providing a new model based on sustainable Balanced Scorecard (SBSC) and (MSDM) for evaluating the performance of oil production companies with independent variables: internal processes, growth and learning, social, environmental and economic variables and dependent variable: oil companies reached the conclusion that Roghan jonoub Company has the highest performance among other companies and Alexander Vernoesse (2012) conducted their study as a multi-dimensional assessment of organizational performance by combining BSC and AHP that the independent variables: internal processes, learning, and growth, financial and consumer and the dependent variable was organizational units that was specified accounting unit has the best performance. Also Chia weihsu (2011) using the FDM and ANP for creating the sustainable Balanced Scorecard (SBSC) with independent variables: internal processes, learning and growth, sustainability and consumer and dependent variables: sub-criteria of the sustainable balanced Scorecard selected the sub-criterion with the highest weight and Chin tsailin & cheng shiung wu (2010) also in a study using analytic hierarchy process for choosing marketing strategies in Taiwan Hotels between the three Porter competitive strategies selected the differentiation strategy as the most appropriate strategy. Also Edgar Elías Osuna & Alvaro Arnedo (2007) in a study with a combination of SWOT and AHP for strategic planning with independent variables: strengths, weaknesses, opportunities and threats and dependent variables: marketing strategy, international development, alliance, microfinance, enterprise development, it was found appropriate strategy is the marketing strategy.

### MATERIALS AND METHODS

In this study, after identifying the Tejarat Bank and documentary studies determined the company design making criteria for the selection of strategic and then by using the relative importance questionnaire of the effective criteria in the selection of the optimal strategy in order to identify and characterize the significant coefficients of the effective criteria in the selection of strategy has been determined.

The questionnaire in accordance with Thomas Saaty pairwise comparisons questionnaire in the format of SuperDecision software designed and was completed by 15 managers and experts. Since in the completion of the questionnaire, each person has his own opinion about the paired comparison, different answers were obtained. To get at a single number and neutralize the effects of a large and small numbers, the geometric mean method was used.

**Validity and Stability of the questionnaire and Model validation**

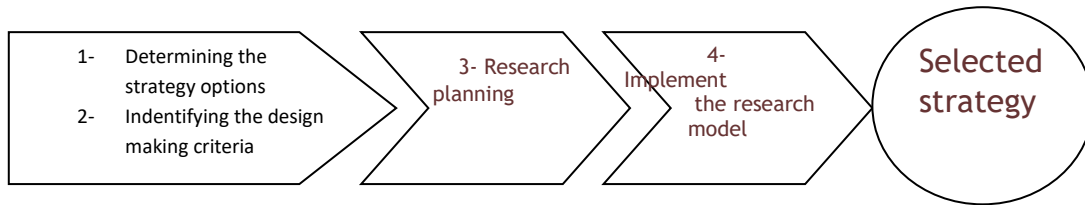
The used questionnaire in this research taken of Tomas Saaty Theory that has been applied in the many studies and also in the field of the questionnaire validity , it has been surveyed from Supervisors and advisors and a number of managers who completed the questionnaires and confirmed its validity. The other criterion in confirming the model accuracy is consistency ratio (CR) of the pairwise matrices of. The calculated CR with ANP and AHP should be lower than 0.1. The consistency ratio of applied pairwise comparison matrices in this study is calculated by EXPERTCHOICE and ANP-SUPERDECISION software. After obtaining all of the consistency ratios, observed that their amounts maintained lower than 0.1 and with regarding this issue can be certain of the proportionality of the pairwise comparison matrices that applied in this study. Consistency ratios of all questionnaires provided in the [Table 1].

**Table 1:** the Consistency ratios of questionnaires

CR	criteria
0.0618	Criteria interdependency matrix based on social criterion
0.0909	Criteria interdependency matrix based on learning and growth criterion
0.0627	Criteria interdependency matrix based on internal processes criterion
0.0830	Criteria interdependency matrix based on financial criterion
0.0830	Criteria interdependency matrix based on environmental criterion
0.0830	Criteria interdependency matrix based on customer criterion

**Data analysis tools**

By using the modeling and multi-criteria design making techniques we prioritize and select strategies. Also to enter pairwise comparisons between factors used ANP-SuperDecision and ExpertChoice software and MatrixCalculatorPro software is used for matrix calculations. The ultimate goal of this research is the prioritization and selection of superior strategy. The process is shown in Figure 3.



**Figure (3):** the implementation research process

**The first step, to determine the strategic options:** In this stage, competitive marketing strategy options were determined for Tejarat Bank.

**The second step, to identify decision criteria:** At this stage, the most important criteria according to the selected marketing strategy, as shown in [Table 2] was determined. In this study, Sustainable Balanced Scorecard (SBSC) is used and the criteria were selected.

Sub-criteria	criteria
Profitability, revenue growth, liquidity	financial
Customer satisfaction, customer acquisition, customer retention	customer
The process of product development, after-sales service, human resources processes, the process of mobilizing resources	Inter processes
Staff skills, information infrastructure, staff productivity	Learning and growth
Equality, job security, quality of life	Social
Economic conditions, political conditions, competitive conditions	environmental

**The third stage, research planning**

In this stage, the plan (model)of the study is made that is used the network analysis process model.

**The fourth step, model implementation:** In this stage according to the ANP method the pairwise comparisons in the form of the designed questionnaire was done and after stages of the analytic network Process, the prioritization of strategies was determined based on the scores, and finally the competitive strategy of marketing was chosen for Tejarat banks. This stage includes the following steps:

**The first step:** the pairwise comparison of criteria was performed with assuming that there is no relationship between criteria. [Table 3] indicates this matter.

**Table 3:** The pairwise comparison matrix of criteria with assuming no relationship between them

CR=0.0964	social	Learning and growth	Internal processes	financial	environmental	customer	Significant weights of criteria
social	1.00000	0.50000	0.50000	0.25000	0.50000	0.50000	<b>0.069294</b>
Learning and growth	2.00000	1.00000	0.50000	0.25000	2.00000	2.00000	<b>0.138026</b>
Internal processes	2.00000	2.00000	1.00000	0.33333	0.00000	0.00000	<b>0.175293</b>
financial	4.00000	4.00000	3.00000	1.00000	0.00000	0.00000	<b>0.426595</b>
environmental	2.00000	0.50000	0.00000	0.00000	1.00000	0.00000	<b>0.095396</b>
customer	2.00000	0.50000	0.00000	0.00000	0.00000	1.00000	<b>0.095396</b>

In considering of the obtained weights, the criteria matrix is (W1) that the rows of the matrix respectively shows the weights of social, learning and growth, internal processes, financial, environmental and consumer factors.

**Second step:** pairwise comparison of criteria with considering of the dependency between the criteria.

Interdependence between the criteria by using the analysis of each criterion effects in the other criteria with the pairwise comparison is determined that results are shown in (4) to (9) tables. On the base of presented interdependence in this figure, the pairwise comparison matrix for criteria is formed.

**Table 4:** Criteria interdependency matrix based on social criterion

CR=0.0618	Learning and growth	Internal processes	financial	environmental	customer	The relative significant weights
Learning and growth	1.00000	0.33333	0.50000	3.00000	0.50000	<b>0.125026</b>
Internal processes	3.00000	1.00000	0.50000	0.50000	3.00000	<b>0.313380</b>
financial	2.00000	2.00000	1.00000	4.00000	2.00000	<b>0.339312</b>
environmental	0.33333	0.20000	0.25000	1.00000	0.33333	<b>0.057642</b>
customer	2.00000	0.33333	0.50000	3.00000	1.00000	<b>0.164640</b>

**Table 5:** Criteria interdependency matrix based on learning and growth criterion

CR=0.0909	social	Internal processes	financial	environmental	customer	The relative significant weights
social	1.00000	0.33333	0.25000	0.33333	0.50000	<b>0.075215</b>
Internal processes	3.00000	1.00000	0.33333	1.00000	1.00000	<b>0.176769</b>
financial	4.00000	3.00000	1.00000	2.00000	2.00000	<b>0.384044</b>
environmental	3.00000	1.00000	0.50000	1.00000	1.00000	<b>0.189419</b>
customer	2.00000	1.00000	0.50000	1.00000	1.00000	<b>0.174554</b>

**Table (6)** Criteria interdependency matrix based on internal processes criterion

CR=0.0627	social	Learning and growth	financial	environmental	customer	The relative significant weights
social	1.00000	0.50000	0.33333	0.50000	0.00000	<b>0.086771</b>
Learning and growth	2.00000	1.00000	2.00000	2.00000	0.50000	<b>0.257539</b>
financial	3.00000	0.50000	1.00000	2.00000	2.00000	<b>0.266166</b>
environmental	2.00000	0.50000	0.50000	1.00000	1.00000	<b>0.153083</b>
customer	0.00000	2.00000	0.50000	1.00000	1.00000	<b>0.236441</b>

**Table 7:** Criteria interdependency matrix based on financial criterion

	social	Learning and	Internal	environmental	customer	The relative
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CR=0.0830		growth	processes			significant weights
social	1.00000	0.50000	0.50000	0.33333	0.33333	<b>0.085012</b>
<b>Learning and growth</b>	2.00000	1.00000	0.25000	2.00000	0.33333	<b>0.142466</b>
<b>Internal processes</b>	2.00000	4.00000	1.00000	2.00000	0.50000	<b>0.270645</b>
<b>environmental</b>	3.00000	0.50000	0.50000	1.00000	0.33333	<b>0.132929</b>
<b>customer</b>	3.00000	3.00000	2.00000	3.00000	1.00000	<b>0.368948</b>

**Table 8:** Criteria interdependency matrix based on environmental criterion

CR=0.0830	social	Learning and growth	Internal processes	financial	customer	The relative significant weights
social	1.00000	2.00000	2.00000	0.25000	0.33333	<b>0.137941</b>
<b>Learning and growth</b>	0.50000	1.00000	0.33333	0.33333	0.50000	<b>0.085043</b>
<b>Internal processes</b>	0.50000	3.00000	1.00000	0.33333	0.33333	<b>0.123916</b>
financial	4.00000	0.300000	0.300000	1.00000	2.00000	<b>0.389941</b>
<b>customer</b>	3.00000	2.00000	3.00000	0.50000	1.00000	<b>0.263160</b>

**Table 9:** Criteria interdependency matrix based on customer criterion

CR=0.0830	social	Learning and growth	Internal processes	financial	environmental	The relative significant weights
social	1.00000	4.00000	3.00000	3.00000	3.00000	<b>0.444242</b>
<b>Learning and growth</b>	0.25000	1.00000	2.00000	2.00000	2.00000	<b>0.197280</b>
<b>Internal processes</b>	0.33333	0.50000	1.00000	1.00000	0.50000	<b>0.101488</b>
financial	0.33333	0.50000	1.00000	1.00000	0.50000	<b>0.101488</b>
<b>environmental</b>	0.33333	0.50000	2.00000	2.00000	1.00000	<b>0.155503</b>

**The third step:**

Determining of the interdependent of the criteria

In this step calculated the interdependent of criteria as follows:

$$W_2 * W_1 = \begin{bmatrix} 1.000000 & 0.075215 & 0.086771 & 0.085012 & 0.137941 & 0.444242 \\ 0.125026 & 1.000000 & 0.257539 & 0.142466 & 0.085043 & 0.197280 \\ 0.313380 & 0.176769 & 1.000000 & 0.270645 & 0.123916 & 0.101488 \\ 0.339312 & 0.384044 & 0.266166 & 1.000000 & 0.389941 & 0.101488 \\ 0.057642 & 0.189419 & 0.153083 & 0.132929 & 1.000000 & 0.155503 \\ 0.164640 & 0.174554 & 0.236441 & 0.368948 & 0.263160 & 1.000000 \end{bmatrix} *$$

$$\begin{bmatrix} 0.069294 \\ 0.138026 \\ 0.175293 \\ 0.426595 \\ 0.095396 \\ 0.095396 \end{bmatrix} = \begin{bmatrix} 0.186690 \\ 0.279542 \\ 0.358366 \\ 0.596653 \\ 0.223911 \\ 0.354840 \end{bmatrix} / 2 = \begin{bmatrix} 0.093345 \\ 0.139771 \\ 0.179183 \\ 0.298326 \\ 0.111955 \\ 0.177420 \end{bmatrix} = \begin{bmatrix} \text{social} \\ \text{learning and growth} \\ \text{internal processes} \\ \text{financial} \\ \text{environmental} \\ \text{customer} \end{bmatrix}$$

As can be observed there are the major differences in the results for the priority criteria with W1 (weights of the criteria with assuming independence among them). Also the criteria are based on the values as financial priority, priority of the internal processes, priority of the consumer, the priority of the learning and growth, priority of the environmental and social priority.

**Fourth Step:** At this stage, the internal priorities of the sub-criteria are determined by a pairwise comparison matrix. The pairwise comparison matrix is shown in 10 to 15 tables

**Table (10)** paired comparison matrix to prioritize the social criteria

CR=0.0516	security	equality	quality	Sub-criteria weights
security	1.00000	0.50000	2.00000	<b>0.310814</b>
equality	2.00000	1.00000	2.00000	<b>0.493386</b>
quality	0.50000	0.50000	1.00000	<b>0.195800</b>

Table (11) the sub-criteria priority matrix of the learning and growth standards

CR=0.0516	Information Infrastructure	Staff skills	Efficiency and productivity	significant weights of sub-criteria
Information Infrastructure	1.00000	0.33333	0.50000	0.157056
Staff skills	3.00000	1.00000	3.00000	0.593634
Efficiency and productivity	2.00000	0.33333	1.00000	0.249310

Table (12) sub-criteria priority matrix of the internal processes

CR=0.0304	After-sales service	resources mobilization process	Process development services	Human resources process	significant weights of sub-criteria
After-sales service	1.00000	0.50000	0.25000	0.33333	0.093419
resources mobilization process	2.00000	1.00000	0.33333	0.33333	0.143218
Process development services	4.00000	3.00000	1.00000	2.00000	0.458558
Human resources process	3.00000	3.00000	0.50000	1.00000	0.304805

Table (13) sub-criteria priority matrix of the financial

CR=0.0064	Revenue growth	profitable	Liquidity	weights of sub-criteria
Revenue growth	1.00000	0.33333	1.00000	0.191941
profitable	3.00000	1.00000	4.00000	0.633700
Liquidity	1.00000	0.250000	1.00000	0.1744359

Table (14) sub-criteria priority matrix of the environmental

CR=0.0707	Economic conditions	Competitive conditions	Political conditions	weights of sub-criteria
Economic conditions	1.00000	0.33333	3.00000	0.268368
Competitive conditions	3.00000	1.00000	4.00000	0.614411
Political conditions	0.33333	0.25000	1.0000	0.117221

Table (15) sub-criteria priority matrix of the costumer

CR=0.0147	Attracting customers	Customer retention	Customer satisfaction	weights of sub-criteria
Attracting customers	1.00000	0.50000	0.33333	0.169205
Customer retention	2.00000	1.00000	1.00000	0.387479
Customer satisfaction	3.00000	1.00000	1.0000	0.443316

**Fifth Step:** At this stage the overall criteria priorities by using the multiplying interdependent priorities found in the third stage in obtained sub-criteria internal priority in the fifth stage are calculated, these calculations are as follows.

$$W_{\text{social}} * 0.093 = \begin{bmatrix} 0.310814 \\ 0.493386 \\ 0.195800 \end{bmatrix} * 0.093 = \begin{bmatrix} 0.028905 \\ 0.045884 \\ 0.018209 \end{bmatrix}$$

$$W_{\text{learning and growth}} * 0.140 = \begin{bmatrix} 0.157056 \\ 0.593634 \\ 0.249310 \end{bmatrix} * 0.140 = \begin{bmatrix} 0.021987 \\ 0.083108 \\ 0.034903 \end{bmatrix}$$

$$W_{\text{internal processes}} * 0.179 = \begin{bmatrix} 0.093419 \\ 0.143218 \\ 0.458558 \\ 0.304805 \end{bmatrix} * 0.179 = \begin{bmatrix} 0.016722 \\ 0.025636 \\ 0.082081 \\ 0.054560 \end{bmatrix}$$

$$W_{\text{financial}} * 0.298 = \begin{bmatrix} 0.191941 \\ 0.633700 \\ 0.174659 \end{bmatrix} * 0.298 = \begin{bmatrix} 0.057198 \\ 0.188842 \\ 0.052048 \end{bmatrix}$$

$$W_{\text{environmental}} * 0.112 = \begin{bmatrix} 0.268368 \\ 0.614411 \\ 0.117221 \end{bmatrix} * 0.112 = \begin{bmatrix} 0.030057 \\ 0.068814 \\ 0.013129 \end{bmatrix}$$



$$W_{\text{customer}} * 0.177 = \begin{bmatrix} 0.169205 \\ 0.387479 \\ 0.443316 \end{bmatrix} * 0.177 = \begin{bmatrix} 0.029949 \\ 0.068583 \\ 0.078467 \end{bmatrix}$$

$$W_{\text{sub-criteria}} = \begin{bmatrix} 0.028905 \\ 0.045884 \\ 0.018209 \\ 0.021987 \\ 0.083108 \\ 0.034903 \\ 0.016722 \\ 0.025636 \\ 0.082081 \\ 0.054560 \\ 0.057198 \\ 0.188842 \\ 0.052048 \\ 0.030057 \\ 0.068814 \\ 0.013129 \\ 0.029949 \\ 0.068583 \\ 0.078467 \end{bmatrix}$$

Sixth Step: In this stage, the degree of importance of each strategy according to the following sub-criteria calculated. Pairwise comparison matrices results are shown in 16 to 34 tables.

Table (16) Matrix of the determining strategies priorities related to security

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	7.00000	4.00000	0.695524
Focus strategy	0.14286	1.00000	0.25000	0.075429
Leadership of reducing in cost strategy	0.25000	4.00000	1.00000	0.229047

Table (17) The paired comparison Matrix of the determining strategies priorities related to equality

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	0.50000	0.20000	0.122020
Focus strategy	2.00000	1.00000	0.33333	0.229651
Leadership of reducing in cost strategy	5.00000	3.00000	1.00000	0.648329

Table (18) The paired comparison Matrix of the determining strategies priorities related to quality

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	3.00000	0.33333	0.258285
Focus strategy	0.33333	1.00000	0.20000	0.104729
Leadership of reducing in cost strategy	3.00000	5.00000	1.00000	0.636986

Table (19) The paired comparison Matrix of the determining strategies priorities related to information infrastructure

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	5.00000	1.00000	0.636986
Focus strategy	0.33333	1.00000	3.00000	0.258285
Leadership of reducing in cost strategy	0.20000	0.333333	1.00000	0.104729

Table (20) paired comparison Matrix of the determining strategies priorities related to staff skills

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	5.00000	1.00000	0.444294
Focus strategy	0.20000	1.00000	0.16667	0.083616
Leadership of reducing in cost strategy	1.00000	6.00000	1.00000	0.472090

Table (21) paired comparison Matrix of the determining strategies priorities related to the employee productivity and efficiency

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	0.500000	0.333333	0.136422
Focus strategy	2.00000	1.00000	0.500000	0.296610
Leadership of reducing in cost strategy	3.00000	2.00000	1.00000	0.593614

Table (22) paired comparison Matrix of the determining strategies priorities related to after-sales services

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	3.00000	2.00000	0.539614
Focus strategy	0.33333	1.00000	0.50000	0.163424
Leadership of reducing in cost strategy	0.50000	2.00000	1.00000	0.296961

Table (23) paired comparison Matrix of the determining strategies priorities related to the resources mobilization process

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	0.33333	0.25000	0.117221
Focus strategy	3.00000	1.00000	0.33333	0.268368
Leadership of reducing in cost strategy	4.00000	3.00000	1.00000	0.614411

Table 24: Paired comparison Matrix of the determining strategies priorities related to services development process

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	0.33333	0.20000	0.104729
Focus strategy	3.00000	1.00000	0.33333	0.258285
Leadership of reducing in cost strategy	5.00000	3.00000	1.00000	0.636986

Table 25: paired comparison Matrix of the determining strategies priorities related to human resources process

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	4.00000	0.33333	0.270557
Focus strategy	0.25000	1.00000	0.16667	0.085220
Leadership of reducing in cost strategy	3.00000	6.00000	1.00000	0.644223

**Table 26:** Paired comparison Matrix of the determining strategies priorities related to Revenue growth

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	0.50000	1.00000	0.259921
Focus strategy	2.00000	1.00000	1.00000	0.412602
Leadership of reducing in cost strategy	1.00000	1.00000	1.00000	0.327477

**Table 27:** paired comparison Matrix of the determining strategies priorities related to profitable

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	3.00000	5.00000	0.636986
Focus strategy	0.33333	1.00000	3.00000	0.258285
Leadership of reducing in cost strategy	0.20000	0.33333	1.00000	0.104729

**Table 28:** paired comparison Matrix of the determining strategies priorities related to liquidity

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	6.00000	2.00000	0.614411
Focus strategy	0.16667	1.00000	0.50000	0.117221
Leadership of reducing in cost strategy	0.50000	2.00000	1.00000	0.268369

**Table 29:** paired comparison Matrix of the determining strategies priorities related to economic conditions

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	6.00000	3.00000	0.654807
Focus strategy	0.16667	1.00000	0.33333	0.095338
Leadership of reducing in cost strategy	0.33333	3.00000	1.00000	0.249856

**Table 30:** paired comparison Matrix of the determining strategies priorities related to competitive conditions

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	6.00000	5.00000	.0732429
Focus strategy	0.16667	1.00000	1.00000	.0129718
Leadership of reducing in cost strategy	0.200000	1.00000	1.00000	.0137853

**Table 31:** paired comparison Matrix of the determining strategies priorities related to political conditions

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	5.00000	5.00000	.0708856
Focus strategy	0.20000	1.00000	0.500000	.0112524
Leadership of reducing in cost strategy	0.200000	2.00000	1.00000	.0178620

**Table 32:** paired comparison Matrix of the determining strategies priorities related to attracting customers

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CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	1.00000	2.00000	0.376397
Focus strategy	0.1.00000	1.00000	4.00000	0.474230
Leadership of reducing in cost strategy	0.500000	0.25000	1.00000	0.149373

**Table 33:** paired comparison Matrix of the determining strategies priorities related to Customer retention

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	2.00000	2.00000	0.50000
Focus strategy	0.50000	1.00000	1.00000	0.25000
Leadership of reducing in cost strategy	0.50000	1.00000	1.00000	0.25000

**Table 34:** paired comparison Matrix of the determining strategies priorities related to customer satisfaction

CR=0.0734	Differentiation strategy	Focus strategy	Leadership of reducing in cost strategy	Strategies weights
Differentiation strategy	1.00000	3.00000	5.00000	0.648329
Focus strategy	0.33333	1.00000	2.00000	0.229651
Leadership of reducing in cost strategy	2.00000	0.50000	1.00000	0.122020

Using the software, calculated the eigenvectors and then by analyzing the matrices, W4 is calculated

$$W_4 = \begin{bmatrix} 0.695524 & 0.122020 & 0.258285 & 0.636986 & 0.444294 & 0.163424 & 0.539614 & 0.117221 & 0.104729 & 0.270557 & 0.259921 & 0.636986 \\ 0.075429 & 0.229651 & 0.104729 & 0.258285 & 0.083616 & 0.296961 & 0.163424 & 0.268368 & 0.258285 & 0.085220 & 0.412602 & 0.258285 \\ 0.229047 & 0.648329 & 0.636986 & 0.104729 & 0.472090 & 0.539614 & 0.296961 & 0.614411 & 0.636986 & 0.644223 & 0.327477 & 0.104729 \end{bmatrix}$$

Seventh step: finally calculated the total priority of the strategies that reflected interdependent between criteria

$$W_{options} = W_4 * W_{sub-criteria} = \begin{bmatrix} \text{Differentiation strategy} \\ \text{Focus strategy} \\ \text{Leadership of reducing in cost strategy} \end{bmatrix}$$

$$\begin{bmatrix} 0.695524 & 0.122020 & 0.258285 & 0.636986 & 0.444294 & 0.163424 & 0.539614 & 0.117221 & 0.104729 & 0.270557 & 0.259921 & 0.636986 \\ 0.075429 & 0.229651 & 0.104729 & 0.258285 & 0.083616 & 0.296961 & 0.163424 & 0.268368 & 0.258285 & 0.085220 & 0.412602 & 0.258285 \\ 0.229047 & 0.648329 & 0.636986 & 0.104729 & 0.472090 & 0.539614 & 0.296961 & 0.614411 & 0.636986 & 0.644223 & 0.327477 & 0.104729 \end{bmatrix}$$

$$\begin{bmatrix} 0.028905 \\ 0.045884 \\ 0.018209 \\ 0.021987 \\ 0.083108 \\ 0.034903 \\ 0.016722 \\ 0.025636 \\ 0.082081 \\ 0.054560 \\ 0.057198 \\ 0.188842 \\ 0.052048 \\ 0.030057 \\ 0.068814 \\ 0.013129 \\ 0.029949 \\ 0.068583 \\ 0.078467 \end{bmatrix} = \begin{bmatrix} 0.465388 \\ 0.214194 \\ 0.319500 \end{bmatrix} = \begin{bmatrix} \text{Differentiation strategy} \\ \text{Focus strategy} \\ \text{Leadership of reducing in cost strategy} \end{bmatrix}$$

## RESULTS

With regard to the steps taken, the obtained results and according to research aim, identifying the decision-making criteria and selection of competitive marketing strategies using multiple criteria decision making and analytic network process (ANP) techniques took place and have been marked criteria and marketing strategy. In this way, the financial criteria allocated the highest priority with the weight of 0.298326. Weights of the criteria are provided in the [Table 35]

**Table 35:** The priority of the criteria

Criteria weights	criteria
0.298326	financial
0.179183	Internal processes
0.177420	customer
0.139771	Learning and growth
0.111955	environment
0.093345	social

### Choosing of marketing competitive strategy

According to the scores, the overall priority of the strategies in the table (36) is provided.

**Table 36:** the overall priority of strategies based on the MCDM method

strategy	Total score	priority
Differentiation	0.465	1
Leadership in the reducing cost	0.320	2
Focus	0.214	3

According to the results the choosed marketing competitive strategy for Tejarat Bank is "differentiation strategy "

According to the entity of this research seems that the bank shouldn't neglect of creating the strategic and systematic thinking culture and so it is necessary that the top managers that have competency of culture making become pioneers of an internal revolution and a new mobility, therefore the alignment of the personal goals and bank strategic goals, the strategy implementation process will be facilitated and taking the appropriated strategy needs changes that the conducting and managing this change needs sufficient perceive of the bank human resources. In the selection of the differentiation strategy was suggested to pay attention to the human resource areas, organizational systems, considering the business environment and information systems.

### Human resources

1. In order to the growth of organizations, the change is inevitable and the organizational personnel must be adapted to the trend. This adaptation can be achieved through learning of the new skills.
2. The best way of the creating working style and new and sustainable thinking is forming a "learning organization."
3. Organizations and their personnel must have a positive attitude towards the change issue, so that can remain their competitiveness in today's aggressive markets.
4. Creating a positive work culture and removing the negative cultures in the organizational work trend.
5. Administrators to create and develop the favorable organizational cultural face to the human factor. A human that has power, motivation, faith and hidden beliefs that should have been realized in a positive direction and this can't be achieved unless having a strong and efficient management.
6. Considering to developing the work ethic is the most valuable component that forming the work culture in the organization and the first point of the better work and getting to the productivity and efficiency.

### Organizational Systems

1. Organizational structure, policies and regulations, ethics and social responsibility, reward systems, selection, and training.

2. Applying of consolidated paradigm with considering of different doctrines developing in the context of time appropriate to the organizational and environmental circumstances and situations.
3. The application of the most appropriate strategic management methods according to the type, scope and mission of the organization due to the need for localization methods.
4. Trying to obtain the necessary skills in the applying the strategic management due to necessities, benefits of using it and knowledge of the stages, implementation contests and effective factors and the implementation process of strategic management and how to develop it due to intrinsic and environmental barriers.

#### Interest groups outside of the organization (environment)

- 1- General Regulations, clients, specific groups, competitors and...
- 2- The necessity of the identifying the different organizational issues and the external environment based on the delicacies and instabilities and realities by managers and optimal conduction and organizational control accordingly to it and the applying of macro-thinking, holistic and foresight ways in strategic management.

## SUGGESTIONS FOR FUTURE RESEARCH

In this study, the available resources were evaluated using fuzzy MCDM methods to provide an incentive for further studies before researchers. In order to future investigations following items are suggested.

1. Future studies on the anatomy of fuzzy MCDM can be continued further. In this study, several techniques as fuzzy individual techniques were studied and integrated or combined with other techniques, however, many other MCDM techniques still have not been studied
2. The other suggestion for future studies to investigate the similarities and differences between fuzzy MCDM methods. This study focuses on the use of fuzzy DM techniques, so we can consider a broader scope of future investigations.
3. Also recently developed synthetic and modular methods have become increasingly important. In order to help researchers and professionals that are interested in the hybrid FMCDM techniques and applications of hybrid FMCDM methods, it is essential that these issues are investigated in the future and the results of these studies are published.

#### CONFLICT OF INTEREST

There is no conflict of interest.

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None

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