

Research Article

Analyzing “Etka Chain Stores” Strategies and Proposing Optimal Strategies; Using SWOT Model based on Fuzzy Logic

¹Mohammad Aghaei, ²Amin Asadollahi, ³Elham Vahedi and ⁴Mahdi Pirooz

¹Department of Business Management, Branch, Shahid Beheshti University (SBU), Tehran, Iran

²Department of Business Management, Science and Research Branch, Islamic Azad University, Tehran, Iran

³Department of Executive Management, Alborz University, Iran

⁴Department of Industrial Management, Islamic Azad University, Qazvin, Iran

Abstract: To maintain and achieve optimal growth, development and to be more competitive, organizations need a comprehensive and coherent plan compatible with their objectives and goals which is called strategic planning. This research aims to analyse strategically “Etka Chain Stores” and to propose optimal strategies by using SWOT model and based on fuzzy logic. The scope of this research is limited to “Etka Chain stores in Tehran”. As instrumentation, a questioner, consisting of 138 questions, was used. The data have been extracted from interviews to managers and the expert in Etka Chain stores and from studying the available reports in the organization. Validity and reliability of research have been measured. The research consists of two main and four subsidiary questions and lacks hypothesis and regarding type of the objective, this research is an applied one and regarding the data gathering, it is experimental-descriptive and a case study. Analysing the data consists of five steps. In the first step, all the documents, interviews to organization experts and “Etka Chain stores” reports were analysed by tests and a list of environmental opportunities and threats together with strengths and weaknesses was prepared. In the second step, all the above-mentioned factors were screened and opportunities, threats, strengths and weaknesses were identified. In the third stage, by using key factors and SWOT model, the most suitable strategies for the company have been proposed. In the fifth step, an operational program is proposed. The findings of the research indicate that to be more competitive in key axis which includes customers, supply chain, expanses control, competitive smartness, human resources and operational productivity, the company should adopt suitable strategies. In this regard, the suitable strategies were identified, codified and proposed. In this research, planning a strategic management model, analysing value chain for spotting values and removing wasting process has been proposed.

Keywords: Fuzzy logic, hierarchical analysis, SWOT analysis

INTRODUCTION

Strategic planning is a process which is used by most of the world’s successful and well-known companies to navigate their programs and activities. These companies use strategic planning based on long-term future and in line with reaching their goals and missions. If well-codified and implemented properly and timely, this planning will yield strategies which will bring about success and superiority of the company. By considering outer and inner situation of an organization, environmental threats and opportunities and identifying inner strengths and weakness and by considering organization’s mission, long-term objectives of the organization will be set. Further, to reach the objective, the organization will select, among from the options, the strategy which will remove the weakness and threats by depending on the

strengths so that, if implemented properly, the strategy would yield success in battle field. In this research, it is intended to formulate proper strategies of “Etka chain store in Tehran” by exploiting the concepts of strategic programming and new methods of statics. Apart from general concepts of strategic planning which lay the foundation of the process, two techniques of operation research namely as “fuzzy hypothesis testing” and “Analytical Hierarchy Process” have been made use of. The fuzzy hypothesis testing was used to screen and prioritize the strengths, weakness, opportunities and threats. These factors which have been screened and prioritized are the main inputs which are used as the instrumentation to analysing the data of the study. Analytical Hierarchy Process was used to prioritize the codified strategies, considering the desirability of implementation (Kurttila *et al.*, 2000; Vaidya and Kumar, 2006).

Corresponding Author: Mohammad Aghaei, Department of Business Management, Branch, Shahid Beheshti University (SBU), Tehran, Iran

This work is licensed under a Creative Commons Attribution 4.0 International License (URL: <http://creativecommons.org/licenses/by/4.0/>).

The following are the main objectives of the research: First, designing and codifying Etko Chain stores strategies. Second, prioritizing company's strategies by using "AHP" hierarchy technique. The following are subsidiary objectives of the research:

- Identifying, ranking and prioritizing the most affective strengths of the organization
- Identifying, ranking and prioritizing the most affective weaknesses of the organization
- Identifying, ranking and prioritizing the most affective opportunities of the organization
- Identifying, ranking and prioritizing the most affective threats of the organization

According to the objectives, the following questions arise: The first main question is that what are the main strategies of the organization and the second main question is that how are the priorities of each of the main strategies of the organization which are to be implemented. The subsidiary questions of the research are as follow:

- What are the most important weaknesses of the organization?
- What are the most important strengths of the organization?
- What are the most important opportunities of the organization?
- What are the most important threats of the organization?

Research plan: Due to the changes and rapid developments of the environment and intense competition in global markets and in line with its survival and gaining more benefits, each organization needs strategic planning. Strategic planning leads different levels of organization management in setting the objectives. Appreciating and being accountable to the changes will facilitate new opportunities and emerging threats. The above-mentioned benefits would empower the organizations to affect competitive forces rather than being mere accountable to them and react towards variable existing situations.

Research methodology: Regarding type of the research, this is an applied research and regarding data gathering procedure, it is a descriptive-experimental case study. Next, stages of research will briefly be accounted for. In the first stage, theoretical principals of research will be addressed. It is in this stage that explanations about strategic management, status of the industry, AHP technique, Fuzzy hypothesis testing techniques and strategic analysis technique will be presented. The second stage concerns with the identification of the environmental opportunities and threats along with the organization potential strengths

and weaknesses by studying available documents in the company and asking about the expert opinions. Third stage consists of making questioner in screening strategic by using screening test. In the fourth stage, SWOT model will be exploited to codify company's alternative strategies and in the fifth and final stage, the priority of the codified alternative strategies will be conducted by using AHP procedure.

LITERATURE REVIEW

A strategic plan can improve the performance. Members of an organization are inured to constant responsibilities and are engaged in routine challenges and as a result are subject to losing the directions of the objectives of the organizations and losing their attitudes towards it. A strategic plan not only can increase the understanding of the members towards objectives, but also stimulate and lay the foundation of a future-oriented thinking according to a mutual understanding of the objectives of the organization.

Strategic planning: When corporate based on mutual understanding towards common goals, Cooperation between members of an organization would be very effective. A successful strategic plan is the one which establishes a mutual understanding based on the values and thus will result in action. Strategic planning is a communal and cooperative process about which staff and managers have mutual possession. Strategic planning also bears the responsibility towards the society and is sensitive about outer situation of the organization and controls it. Strategic planning is planned according to highly-qualified data and is the central key of the effective management. Different definitions of strategic planning have been proposed by the expert. To avoid circumlocution, a brief definition will be presented. Strategic management is the assurance process to achieve the benefits of implementing appropriate strategies. According to this definition, a proper strategy is defined in accordance with the needs of an organization in due time. The process of strategic planning includes 6 consecutive and constant steps: environmental analysis, laying the foundation of the organization, goal setting, codifying the strategies, preparing the infrastructures, operating the strategies and controlling them. Environmental analysis is to study the environment of the organization in accordance with identifying the factors which have significant effect on organization's performance. Establishing organizational directions: Now, by using the results of environmental analysis, the managers will set up the organizational directions. In this regard, three main factors are organizational mission, organizational outlook and organizations values. These three concepts which act as connectors of organizational elements, represents the nature and the methods of direction

setting of the organization. Mission is tantamount to philosophy, values are regarded as the basic principles and outlook is tantamount to live image of the organization in a well-defined future. A strategist manager must prepare the infrastructure so that the staff would be able to communicate their ideas and decisions about the values, missions and outlooks of their own and that of the organization. Objectives represent the planning in projects and plans are codified in accordance with planning framework and change nebulous and experimental ideas into clear intentions and objectives. Goal setting is an integral part of planning; though the goals might have been set unwisely. Organizational objectives are the destinations towards which open management system steps forward. Inputs, processes and outputs of an organization all operate in accordance with the objectives.

Selecting and codifying the strategies: After analyzing the environment, setting the organizational directions, defining the mission, values, outlook and organizational objectives, managers will be ready to set organizational strategies. Setting strategy means the process of assigning appropriate fields to reach the organizational objectives in accordance to the mission and philosophy. In other words, strategies must reflect environmental analysis and result into achieving the mission and organizational objectives. Due to the strategic management, models and methods of selecting strategy are not depended on a specific technique or instruction and each includes a concept and ideology. That is why, based on the nature of the company, the status quo of the industry in question and environmental situation, there are different kinds of strategic planning. Infrastructure preparation and implementing the strategies, is the fifth stage of strategic management process. It is in this stage that codified strategies will be implemented. Without a regular and programmed implementation, the efficient infrastructures which have been prepared by the managers will be fruitless.

Controlling the strategies: Controlling the strategies which is the last step of strategic management includes controlling and assessing the strategic management process as a whole and acts as the guarantee to proper performance. Controlling all the aspects of environmental analysis, establishing organizational directions, codifying the strategies, implementing the strategies and even the way strategies re controlled are all in the domain of controlling the strategies.

METHODOLOGY

SWOT analysis method systematically identifies strengths, weaknesses, opportunities and threats and reflects suitable strategies to the statuesque of the occupation in question. In this it is intended to represent the generalities of methodology including data gathering tools, data analysis procedure and validity of questionnaires.

Population and sampling: To gather data, different strategies and tools are used. The most important information source is an investigation made into the key managers and experts of the organization which constituting the samples. The number of managers and experts of the company is about 77 persons. To do so, random sampling was used and to calculate the number of adequate samples, the following formula was used:

$$n = \frac{z^2 \times p(1-p)}{e^2}$$

If the calculated sample is less than 5% of the population size, the size will be used as sample of research; otherwise the following formula will be applicable:

$$n' = \frac{n}{1 + \frac{n}{N}}$$

Data gathering procedure: Based on Table 1 and to gather samples of this research, both primary data gathering and secondary data gathering procedures have been used. Primary data are the data which are not already in existence and must be created by the researcher. These data are created by questioners and interviews to the key managers and experts of the Etk chain store. Secondary data are the data which have already been produced and are accessible by the available sources. In this study, secondary data available in Etk chain store, internet, books, journals, seminars and other organizations related to subject have been used. On the whole, the following tools were used for gathering data and information: Questioner, Reports and documents available in different sections of the Etk chain store, interview to experts in the field of strategy, statics and industry. However, questioner is

Table 1: Summarizes the operation

Variable	Concept	Amount	Explain
N	Total number of population	70.00	Leaders and key experts
P	Population success ratio	0.50	Maximum of success is obtained
E	Estimated error rate	0.05	According to the researchers considered
1-α	Estimate level	0.95	According to the researchers considered
n	Prototype samples number	150.00	Calculated by the formula obtained
n/N	Prototype samples number than total	2.14	The needs of compared to the prototype samples are adjusted according
n'	Samples with adjusted	48.00	Samples with adjusted is obtained

the main method of data gathering. It should be mentioned that, in the present study, two types of questioners have been distributed. The first type of questioner includes closed questions of "Likert type fuzzy" and the second one includes closed questions of prioritizing the key factors. Also, it should be mentioned that, before distributing, the questioners have been checked and reviewed.

Analysing data procedure: Since, this research is done in three steps, the following procedure is pursued to analyse the data. First step: After analysing information and documents, available in the Etko chain store and analysing the research findings and also primary interviews to the other chain stores experts, a list of environmental threats and opportunities together with company's strengths and weaknesses will be prepared. Second step: All the above-mentioned Quad factors will be screened. The aim of this step is to identify key factors in terms of opportunities, threats, weaknesses and strengths. For screening, fuzzy stoical test is proposed. In this method, seven hypotheses have been proposed for each factor. If total grade is greater than or equal to 7%, the factor in question relating to H_0 , H_1 , H_2 , H_3 , will prove the correctness of the hypothesis. Third stage: In this stage, strategic factors identified in the second stage, will be screened and thus quantitative data will be available. By creating matrix and SWOT, Strategic positioning of the organization will be prepared. First stage input are a list of environmental opportunities and threats together with the internal weaknesses and opportunities which will be screened and changed into fuzzy questioner. Second stage input is the identification of opportunities, threats, weaknesses and strengths which will constitute the input of the third stage. After the completion of the third stage, there will be time for strategic planning and by using the matrix of opportunities, threats, weaknesses and strengths, there will be a chance to provide an Effective Strategy of the organization.

Validity and reliability of the questioner: To ensure the validity of the questioner, the experts were invited to express their ideas. Before distributing among the members, the questioners were given to a number of experts and after reviewing and amending, the questioners were redistributed. There are a number of different methods for assessing the reliability, among which "Cronbach Alpha" was used. This formula is used to calculate the internal-reliability of the measurement instrumentation. In the present study, to calculate Cronbach Alpha, a number of questioners and some data were used in SPSS.

PROPOSED TECHNIQUES

In this regard, after identifying the key factors of the organization, Fuzzy method will be used to screen

the factors. Then, by SWOT matrix, optimal strategies of the organization will be identified and prioritized by AHP technique.

Fuzzy statics test: Fuzzy statics test is a classical hypothesis test. This test is used to determine the degree the accuracy and inaccuracy of a factor and produce a value in range of (0, 1) which represents the degree of accuracy of hypothesis. Like classical hypothesis test, Fuzzy hypothesis test is composed of four sections; namely as codifying the hypotheses, sampling, testing the hypotheses and decision making. Each of these steps will be accounted for briefly. Due to the reasons such as the nature of research question, inaccuracy of the hypotheses and mistakes made out of the error of measurement, codifying the hypotheses and finding scientific principles is a very difficult job. In research model, by using fuzzy collections and null hypothesis and replaced hypotheses, there should be related applications which will serve as the replacement of each of the fuzzy situations and results. That is why, for any of the variables, applications of seven-set have been used. Calculating the sample size in fuzzy method depends on the distribution of the sample and the hypothesis on which a test will be conducted. To calculate the effectiveness of the sample in fuzzy test, the function of the degree of satisfaction is used. To calculate the degree of correctness of any hypothesis, first, definite numbers of any index must be changed into Latent Variable, then, to calculate the importance of any hypothesis in questioner; one must multiple values of any mentioned value by using Larson Relation and finally calculates an average of any questioner in relation to any hypothesis. The resulted number is the degree of correctness of the hypothesis. Since $M_0 + M_1 + \dots + M_k = 1$ and if degree of correctness of hypothesis which contains such concepts as "too much", "much" and "average" are more than 0.7, that factor will be deemed a strength point for the company; otherwise $\mu_0 + \mu_1 + \mu_2 + \mu_3 + \geq 0.7$ will be used.

SWOT technique: Identifying the opportunities, identifying the part of the market which had been forgotten, improving the relations with customers, finding new middleman and innovations in productions and expanding new agency can be considered as opportunities for the organizations. On the contrary, identifying main threats, economic laws, terms of tax and customs revenue, governmental, social and cultural policies, communicative system between members of the industry, Distribution channels and supply chain of the company, rivals and consumers can be considered as the threats of the organizations. Likewise, identifying key opportunities, company's senior management, delegation, salary, expanding training, hiring educated

staff, good financial conditions, credit purchases, high working capital, expanding IT, Purchases exclusive, reputation, high experience of the company, good packing and developed channel of distribution can be considered as the power of the organization. In the same manner, identifying key weaknesses, organizational structure, seeing the part, not the whole of the organization, poor customer, control and observation, innovation, lack of systematic perspective, group work, decision making, operational and added costs, complexity of structures and methods, Bureaucracy, Motivational system, inventory, system of reward and punishment, marketing process, lack of market information and ordering are considered as weaknesses of the organization (Hill and Westbrook, 1997).

AHP technique: Output of SWOT analysis will be a collection of Quadratic strategies. Due to the Resource constraints, no organization can apply and implement these strategies at the same time. Since, organizations have macro, specific goals and run by specific management methods, they have to prioritize formulated strategies by SWOT. To reach this goal, Hierarchical analysis method will be used (Ho, 2008). This method is composed of three stages; namely as modeling and drawing decision tree, gathering the data and prioritizing data.

GATHERING AND ANALYZING THE DATA

Codifying the strategies in organizations is taken place at three levels which shape the Decision-making hierarchy. Company is the highest level. Such managers as members of the board of directors and executive managers who have the responsibility of Financial Performance and reaching the non-financial objectives, are primary responsible for this objective. The second level of strategy is commercial level whose responsibility bears the managers of Business level. The

third level is to codify Operational level strategies which mostly consist of managers of operational, geographical and production field.

Screening the factors and determining the most important opportunities, threats, strengths and weaknesses: By analyzing the reports on the strategic planning of the company, doing initial interviews to the Etk chain store and industry expert, a number of key factors were identified. One hundred and thirty six items among from identified factors were distributed to the Senior and middle managers, department heads, supervisors and experts under the title of “a questioner to analyzing Status quo of Etk chain stores and its environment” The questioner aims to gather data needed for screening quadric factors and to identify the most important factors. After a while, all the distributed questioners were collected and analyzed. To screen the data, Fuzzy hypothesis testing was exploited. The results of the fuzzy testing were extracted from 50 samples and selected as key factors and constituted the input for SWOT model (Hunger and Wheelen, 2000).

SWOT analysis: Identifying quadric factors prepares the ground for strategic analysis stage which is to simultaneously comparing the quadric factors for extracting Potential strategies.

Based on Fig. 1, the 1st stage is to make up the table. The main usage of the table is to show factors which play crucial role in facilitating the comparison. One of the potential problems in this table is the multiplicity of quadratic factors. To have a better comparison, it is necessary to add 10 very important factors to any of the Axis. However, in some factors, (weakness Axis, for example) more than 30 factors have been confirmed and thus some modifications are to be made. To do so, the factors which were overlapped were identified in a session with company’s managers. Finally, 11 key weaknesses were identified out of the screened weaknesses.

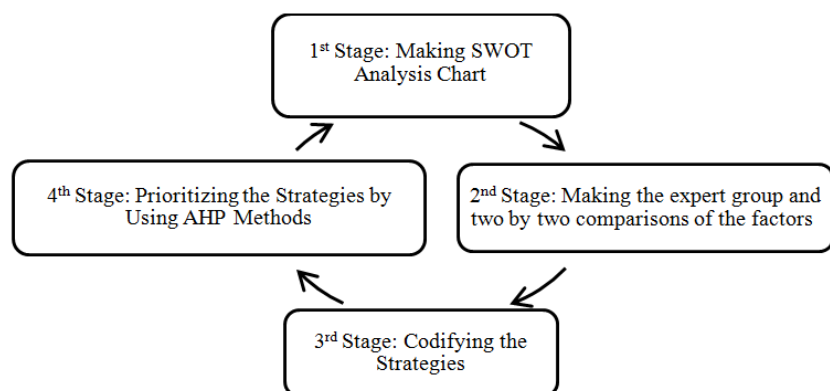


Fig. 1: Summarizes the SWOT analysis model and prioritizing the strategies

With regard to the fact that the advantage of this model is to show the relationship between different factors in a better way, all the factors were compared two by two. After the comparisons in SWOT table, the next stage is to codify the main strategies. In this stage, the expert group will extract the most important factors, by the relationship between the factors.

PRIORITIZING THE STRATEGIES BY AHP TECHNIQUE

After making the AHP questioner and analysing the results by Expert choice soft ware, the outcomes of prioritizing sextet strategies from company’s manager’s perspectives will be presented. The codified strategies (based on importance) are as follow: Establishing and developing customer-centric culture; Improving the

competitiveness by developing research systems; Concentrating on decreasing the abundant costs in all areas; Establishing and developing the effective supply chain by advanced communication technology; Enabling labour competence; Increasing operational efficiency.

CONCLUSION

Based on the research findings and Table 2 and Fig. 2, if handles the strategies, Etka Chain Store will be able to increase its chance to get the biggest share of chain stores. In this regard, to reach the goals, some operational programs will be proposed for any of the strategies. If well-executed, the operational programs will be effective for the company:

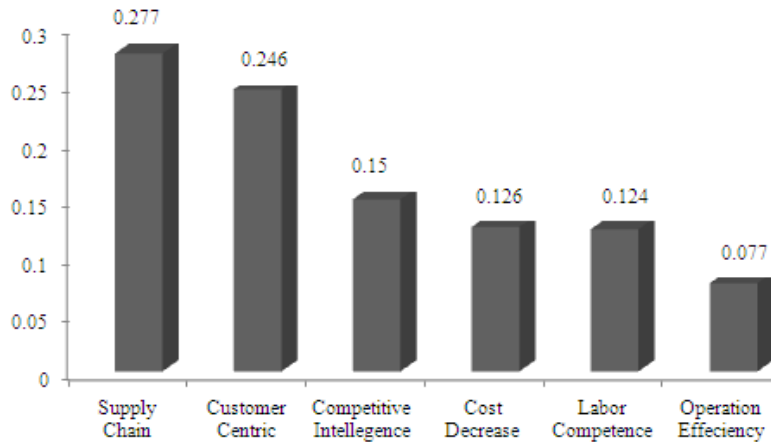


Fig. 2: Prioritizing the strategies by AHP technique; research finding and experts opinion

Table 2: SWOT matrix

Organizational external factor	Organizational internal factor
	<p>Strengths: Company's senior management, delegated authority, rights and benefits, education, attract the educated, a good financial situation, credit purchases, high working capital, information technology development, patent purchases, reputation, experience high company, depending on size appropriate, extensive distribution network</p> <p>Weaknesses: Organizational structure, poor customer perspective, control, innovation, lack of systematic approach, working group, the decision making, high costs and operational overhead inventory, the complexity of the system and method to, bureaucracy, the incentive, reward and punishment system, the process of marketing, lack of market information, investment orders</p>
<p>Opportunities: Identification of the market before it was forgotten, improving relationships with customers, finding a broker, new and innovative product development company representative</p> <p>Threats: Increasing sanctions, coordination little shop with the company, competitors in the process of raw materials more quickly, less bureaucracy in the process of preparing and distributing the products of competitors, the high price of some products to market</p>	<p>SO strategies</p> <p>ST strategies</p> <p>WO strategies</p> <p>WT strategies</p>

Hunger and Wheelen (2000): Strategic management

- Designing a management system which can help managers to constantly codify, develop and improve the strategies.
- Designing supply chain network based on the advanced communication technologies.
- Designing an audit system to analyse the present culture and necessary modifications for balancing chain store culture. The new culture must be preparing the infrastructure which is suitable for the company, the most important of which is customer-centric culture.
- Designing an audit system for the performance which can analyse the degree to which the company has reached its goal and to propose affective feedbacks.

- Ho, W., 2008. Integrated analytic hierarchy process and its applications: A literature review. *Eur. J. Oper. Res.*, 186: 211-228.
- Hunger, J.D. and T.L. Wheelen, 2000. *Strategic Management*. Auflage, upper Saddle River, New Jersey, pp: 136.
- Kurttila, M., M. Pesonen, J. Kangas and M. Kajanus, 2000. Utilizing the analytic hierarchy process AHP in SWOT analysis-a hybrid method and its application to a forest certification case. *Forest Policy Econ.*, 1: 41-52.
- Vaidya, O.S. and S. Kumar, 2006. Analytic hierarchy process: An overview of applications. *Eur. J. Oper. Res.*, 169(1): 1-29.

REFERENCES

- Hill, T. and R. Westbrook, 1997. SWOT analysis: It's time for a product recall. *Long Range Plann.*, 30: 46-52.