Marketing Mix Tailored to the Introduction Stage of the Product using FAHP Method

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Abstract: The main objective of an organization in marketing strategy formulation of a product is to ensure the growth of profit and company's sales in future. Among the marketing strategies presented so far, few studies have been done in the field of strategies for introduction of the product. Marketing mix is used in the formulation and implementation of marketing strategies for a product and product's family. In this study, 7Ps marketing mix that has more elements than 4P is considered. The criteria of birth stage strategies of the product are determined and the conceptual model of marketing mix tailored to Walker's strategies is presented. Paired comparisons are carried out using expert's opinion, fuzzy logic and AHP method and the final weight of each component of the marketing mix elements model is identified.

Key words: Marketing strategies, introduction stage of the product, marketing mix, FAHP, development analysis, model

INTRODUCTION

Today, strategic marketing and successful implementation of marketing strategies are considered increasingly in order to effective presence in competitive market and respond to customer's needs. The speed of technological progress, rapid market developments and rising competitors has been effective in the strategic role of marketing. While global markets provide good opportunities for sales growth and profitability, differences in market competitive conditions of countries can force companies to adjust competitive strategies and marketing plans. According to such changes, most organizations in different industries try to pay attention to the needs and demands of customers and to be highly flexible, customer-oriented and market-oriented in order to be successful in future. Consequently, the effective function of marketing activities, especially those activities associated with identifying, analyzing and providing customer's needs will play a greater role in the design and successful implementation of strategies at all organizational levels (Walker *et al.*, 2006).

Understanding the strategic position of organization which is the result of assessing organizational abilities, environmental threats, strengths and weaknesses of competitors and customer's needs is considered as an essential starting point for developing a marketing strategy. The marketing strategy process is presented in Fig. 1 (Wilson and Gilligan, 2012).
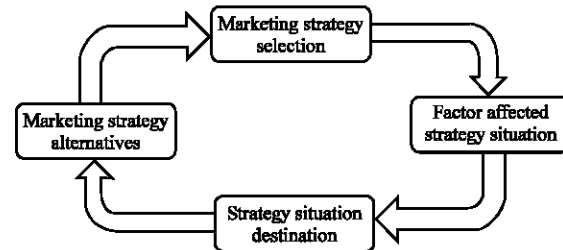

Fig. 1: Marketing strategy process

Walker *et al.* (2006) have considered the main center of marketing strategy as proper and consistent allocation of marketing resources to meet the company's operational goals in terms of particular product-market. Jain (1983) has compared strategic marketing and marketing management. He defined strategic marketing as the main decision about the location, how and time of main competition. Wilson has considered strategic marketing management including answer the following questions:

- Where are we now?
- Where would you like to be?
- How can we get?
- What is the best way?
- How can be ensured of arrival?

Planning, implementing and controlling marketing activities are the results of answering to the above

questions. In order to answer the question 3, how to achieve what is intended, the marketing mix has been considered (Wilson and Gilligan, 2012). According to the definition, marketing mix is the combination of controllable factors, a set of activities and methods that the organization uses to influence customers and consumers to buy their products. Neil Borden is mentioned as the first person who raised the concept of marketing mix. Jerom McCarthy reformed the definition and considered marketing mix elements as product, price, promotion and place (Constantinides, 2006). Booms and Bitner added three elements as people, physical evidence and process to the marketing mix (Rafiq and Ahmed, 1995). In this study, the importance of each element of marketing mix at the introduction stage of the product life cycle has been studied. The purchase of a new product is limited at this stage (birth) because the target market members are not sufficiently aware of such a product in the market. Therefore, selecting suitable marketing strategy, implementing and choosing appropriate combination of marketing mix is important. In this study, seven-dimensional marketing mix and appropriate criteria for each element are identified and considered and a suitable conceptual model is presented according to the structure of problem. Then, the view of experts is gathered, by using questionnaire and interview and proper combination of marketing mix elements has been proposed using Fuzzy Hierarchical Structure (FAHP).

Literature review: Borden (1964), for the first time, raised the concept of marketing mix including twelve controllable factors resulted in beneficial operations of business (Constantinides, 2006). Based on the literature, McCarthy modified Borden's definition and changed marketing mix elements to 4P (Product, Price, Promotion and Place). Kotler (2012) considered the marketing mix 4P as controllable parameters which influence the process of consumer purchasing. Many studies have confirmed the importance and reliability of 4P in practice. For example, Singh (2012) has investigated the importance of relation of different elements of marketing mix in achieving competitive advantage in the market. Patil and Bach (2011) has investigated the importance of appropriate combination of marketing mix in dynamic environment of market. There are many criticisms to this framework and the need to define the element or more elements has been proposed. Nickels and Jolson (1976) proposed packaging and Mindak and Fine have proposed public relation as the fifth element (Rafiq and Ahmed, 1995). Kotler (1986) added two environmental factors

(political power, public opinion formulation) to elements of traditional marketing mix (Rafiq and Ahmed, 1995).

In recent years, many studies are conducted in the field of service marketing. In many studies, the distinction of nature of service to product is mentioned and consequently, the marketing mix elements of service companies have been considered different from production. The elements of marketing mix has been proposed by Booms and Bitner (1981) included the traditional 4P and three elements as people, physical evidence and process, first was considered for service organizations but according to the importance of three elements added to the marketing and organization function, 7P can be used in all organizations including production and services 2 (Rafiq and Ahmed, 1995).

Yoo *et al.* (2000) reviewed the relationship between elements of marketing mix and brand equity. Dr. Sreenivas evaluated and reviewed marketing process and application of 7P in two hospitals in 2013. According to the results, marketing mix in selected hospitals has been accepted (Sreenivas *et al.*, 2013). Kushwaha and Agrawal (2015) examined the effect of seven factors of marketing mix on customers of bank and proposed appropriate mix, Astuti *et al.* (2015) investigated the effect of marketing mix-based strategy on purchasing decision by apple consumers and analysis of results showed the importance of price as the main variable among other factors of marketing mix. Kukanja *et al.* (2017) examined the components of marketing mix elements (7P) in the restaurant and determined the importance of each of these factors in customer loyalty (Kukanja *et al.*, 2017). Competitive criteria are generally different in each stage of product life cycle, for example, technology is important at the stage of introduction (birth stage). In this study, the importance of marketing mix elements at the introduction stage of the product life cycle (birth) which has not been seen in previous studies is examined and the conceptual model is presented.

MATERIALS AND METHODS

Describing the model: In this study, introduction stage of the product (birth) and marketing strategy criteria are explained, the product mix is defined and the proposed model is presented. Selling a product in a predictable way changes over time and each product passes certain stages: introduction (birth), growth, maturity and decline. Each of these stages presents certain

opportunities and threats to the organization, thus influencing the strategy of the organization as well as marketing plans (Walker *et al.*, 2006).

In marketing strategy, market development and position of product in the life cycle should be considered (Wilson and Gilligan, 2012). The introduction stage of the product (birth) is a critical stage and very important, at this stage, new product will enter the market. Appropriate marketing strategies have great influences on speed of product acceptance in the market and success of the organization. Walker has categorized marketing strategy into two categories: pioneering and following. A pioneering organization is the first entering to a specific product market with very high risks which the pioneering has many potential competitive advantages such as determining the positions and market sections as well as the rules of game for the organization. A following organization, using the experiences of pioneering organization and improving product designs has designed and produced new products with better function and widely promotes (Walker *et al.*, 2006). Marketing strategies for the introduction stage of the product (birth) according to Walker's definition.

The pioneering companies are entering the market at the birth stage of the product. The ultimate success of a pioneering strategy depends on nature of demand and competitive position of pioneering company's competitors and on the ability of pioneer company to design and support an effective marketing plan. A pioneer company may choose one of the three different types of marketing strategies. Of course, success of a strategy depends to a large extent on how implementing strategy by company.

Influence in mass market: The ultimate goal is to achieve the market share of new product and maintain it. Therefore, the main task of marketing is to convince a large number of customers to accept the product of pioneering company to reduce costs of unit and make loyal customers before entering competitors to market.

Influence in specific market: Company must define success on the basis of a limited number of criteria and indicators. The company focuses efforts on a market section. This kind of strategy can help smaller companies to take the most profit from limited financial resources and avoid confronting larger competitors. This strategy is chosen at a time when the speed of market growth is faster than the pioneering company's expectation and there are scattered markets with limited resources.

Temporary entry to a market and quick withdrawal: According to this strategy, the pioneering company sets

Table 1: Criteria of introduction stage of the product (birth) in marketing strategies

Names	Name of criterion
New technology usage	Distribution speed
Product development	Advertising
After-sales service	Product testing by customer
Warranty	Engineering skill
Pricing	Marketing and sales skills
Distribution channel development	

a high price for new products and executes limited promotional and promotional operations. At the same time, the company may work on new applications for technology or for the next generation of advanced technology. After entering rivals into the market and reducing the margin of profit, the pioneer company is ready to swallow its product and focus on a product with new technology or even enters new sections of market".

The criteria of introduction stage of the product (birth) are determined according to literature review and modified after receiving the opinion of marketing experts and main criteria are presented in Table 1.

Marketing mix: Marketing through marketing mix helps to achieve the goals of organization (Wilson and Gilligan, 2012). Marketing mix is a combination of controllable decision variables that are used by the organization to supply goods and services to market and affect customers. Marketing mix is an optimal combination of all marketing needs that organization requires to achieve goals. The marketing mix consists of seven elements: product, price, place, promotion, people, process and physical evidence. The level of marketing expenditures is decided by marketing manager to achieve the goals of organization and then it is decided on how to divide it among the mixed elements after the finalization of budget (Patil and Bach, 2017).

Marketing mix elements have been categorized according to literature review of articles (Wilson and Gilligan, 2012; Rafiq and Ahmed, 1995; Codita, 2011) and expert opinion in Table 2 and they have been defined as following.

Product: Product is the key element of any marketing mix. It is considered physical product or service ready to serve to consumer including tangible products such as appliances, clothes, groceries, etc. and intangible products such as services purchased by consumers. Product planning involves a variety of firm decisions that can be made to provide products to market. These decisions include decision making in the design field, quality of product or service provided to customer, usefulness of the product, convenience in life by product, creation of value for customer, branding for product and

Table 2: Marketing mix attributes

Product	Price	Place	Promotion	People	Process	Physical evidence
Attribute:	Strategies:	Distribution-channel type	Sales promotion	Employee:	Procedure	Environment:
(Design	(Skimming	Distribution-coverage	Special offers	(Training	Mechanization	(Layout
Quality	Penetration		Advertising	Requiting	Flow of activity	Furniture
Packaging	Psychological		Endorsements	Reward	Customer-involvement	Dressing
Branding usefulness	Cost-plus		User trials	Motivation		Comfort)
Value	Loss leader)		Direct mailing	Team working clture)		Signs
Convenience)			Leaflets/posters	customer:		Symbols
Technology			Competitions	(education training		Artifacts
Warranties			Free gifts	culture services)		
delivery			Joint ventures			

organization, technology used warranties and delivery. In this study, design, quality, branding, packaging, usefulness, convenience is considered in a category of product's attribute.

Price: Price is an amount that customer must pay to receive the goods or services. Since, the price of product depends on many factors, it constantly changes; therefore, the price should be dynamic in order to be survived against changes over time. Price is affected by a number of factors including material cost, product diversity, competition, market share and product value.

Pricing strategies includes critical decisions for a company that can determine price based on competitive pricing strategy considering distribution, advertising and other factors. Among the pricing strategies, it can be referred the following cases:

Skimming: In this strategy, initial pricing is relatively high compared to similar goods and price reduces gradually?

Penetration pricing: It means fixing the price of goods on a relatively low value to the competitors assuming that it will obtain a large market that will allow the organization to increase price in the future.

Psychological pricing: This strategy is used throughout the world. Marketers believe that these sums create less payment than other numbers for buyers, hence, labels such as 9.99, 49900, etc. are used.

Cost-plus: Is the concept that companies try to maximum profit by very high pricing?

Loss leader: The strategy of using low prices to attract new business.

Promotion: One of the strongest elements of marketing mix. The marketing manager decides how much spend for promotion. Promotional activities are complementary of individual sales and promotions. Promotion involves a different mix of components that help the organization achieve marketing objectives. Promotion decisions relate to the below cases.

Advertising: An important way of communicating and transferring information in order to attract customers from target market. There are several methods such as magazine, journal, TV, newspaper, poster, e-mail and more. In each of the ways with various techniques such as competitions and prizes, the use of celebrities, creates more sense of competition and attraction for customers.

Sales promotion: This way, service is provided to customer at the time of purchase. For example with every 3 purchases, a free product is presented. Variants like coupons, discounts, accessories, gifts and free tests and so on.

Public relation: Strategic communication process that creates communication between organizations and public. Such as holding different campaigns and conferences that causes long-term and positive impact from company and product in the mind of customer and all stakeholders.

Place: Place includes distribution channels, warehouse facilities, type of transportation and inventory management. It is a mechanism that transfer the goods and services from the producer to the customer. Distribution channels include retail, for close communication with the customer, wholesale, for providing product at a much volume with less price, internet, for online sales, direct sales and without intermediary, peer-to-peer sales by satisfied customers or the use of multi-channel simultaneously (Patil and Bach, 2017; Codita, 2011).

In general, choosing the type of distribution channel and the extent of coverage will change marketing strategy which considered in this study.

People: Studies have shown that examining the number of people in target market is very important for a variety of products and services. Employees of company play an
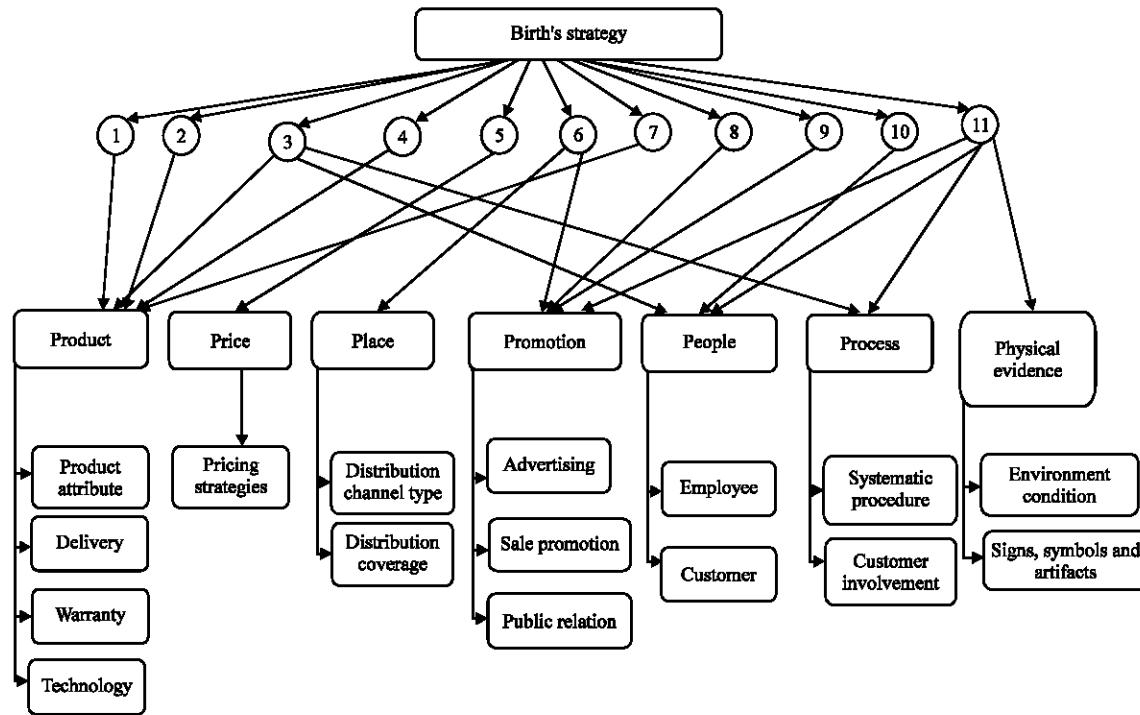
Fig. 2: The conceptual model (hierarchy)

important role in effective marketing as they are people who serve, therefore, hiring and training the right people to serve customers is very important. The belief of organization's employees to products and services increases the likelihood of better working. In addition, they focus more on criticisms and suggestions that presented honestly about organization to grow. This is a domestic competitive advantage to competitors. The processes which presented in the field of knowledge, education, culture and services to customers are in this area and show the importance of role of customers. In this study, people are divided into main employees and customers.

Process: System and organization processes affect the implementation of service thus it should be ensured the appropriateness of process for minimizing costs. These costs can include sales, payment, distribution system and other systematic steps and procedures to ensure the proper administration of business. Therefore, a systematic system is needed in order to have such a process that uses all the necessary mechanisms for the best presentation. Another important criterion in this case can be the cooperation of customers in the process which is very important. In this study, the systemic procedure and customer participation are two main pillars of process.

Physical evidence: It is referred to the environment and appearance of surrounding in which the product or service is provided to the customer. Buildings, colors and layout of environment, signs and symptoms and everything related to the quality of product and service such as how the staff dress are the case considered in this area. This study is divided into two main categories: environment condition, signs, symbols and artifacts. Based on field studies and literature review, the model presented in this study is shown in Fig. 2.

RESULTS AND DISCUSSION

Fuzzy AHP analysis process: Hierarchical analysis process is one of the most well-known multi-criteria decision-making techniques introduced by Saaty (1990). Basis of this approach is the paired comparisons of options and a hierarchical structure. AHP is an effective tool for decision making in complex situations that helps the decision maker to prioritize choices and make the best decision. Buckly (1985) developed AHP and used fuzzy values instead of definite numbers.

Theory of fuzzy sets was first introduced by Professor Lotfizadeh in 1965 at the University of Berkeley, America. Different meanings are mentioned in the dictionary for fuzzy such as ambiguous, dumb, unobvious

Table 3: Linguistic terms for fuzzy numbers (Ataei, 2010)

Linguistic terms	Fuzzy numbers
Exactly equal importance	1, 1, 1
Almost equal importance	1, 1, 3
Low importance	1, 3, 5
High importance	3, 5, 7
Very much importance	5, 7, 9
Complete importance (Absolute)	7, 9, 11

and inexact. Fuzzy logic can be used for multiple management systems including decision making, policy making, planning and modeling (Ataei, 2010).

Man faces the vague and unclear concepts expressed in verbal variables, fuzzy logic considers the approximate nature of human reasoning and uses them. The first step in the fuzzy decision process is fuzzification of vogue and verbal phrases. For this purpose, fuzzy numbers are used.

Fuzzy numbers are fuzzy sets that are used when implicit representation of the uncertainty associated with numerical data is required (Ghazanfari and Rezaei, 2011). In this study, the linguistic terms accommodate to triangular fuzzy numbers are shown in Table 3.

Laarhoven and Pedrycz (1983), two Dutch researchers, presented a method based on logarithmic least-squares for the fuzzy hierarchy process but the method was not used due to the number of calculations and complexity of procedures. Buckley (1985) presented a simpler method for trapezoidal fuzzy numbers. In 1996, Extent Analysis Method (EA) was presented by Chang (1996) which triangular fuzzy numbers were the used numbers in this method. Also, people like Chang *et al.* (2006), presented ideas for analyzing fuzzy AHP approach (Ghodsipour, 2005).

Chang's method is one of the methods that today is widely used; Zhang *et al.* (2017) to select the mine exploration spots, Tyagi *et al.* (2017) to select appropriate knowledge management of different product development phases, Dargi *et al.* (2014) to select the appropriate provider and Lee to analyze the competition between oxygen production and technology between different countries have used this method.

According to the hierarchical model in this study and literature review, the process of fuzzy hierarchy analysis is used. Also, extent analysis method (Chang) which has been used extensively is applied for solving. Therefore, concepts and definitions of fuzzy hierarchy analysis process based on extent analysis method are presented as follows.

Extent analysis method (Chang): In this method, the tree of decision hierarchy is first drawn and then paired comparisons of elements of each model level are done.

Coefficients of each of matrices of paired comparison are calculated using the definitions and fuzzy AHP concepts. Also, in order to logical examination of expert's answers, inconsistency ratio of each matrix is evaluated and if this rate is >0.1, then the survey should be re-evaluated (Chang, 1996).

Calculating inconsistency ratio: Inconsistency ratio as mentioned in study by Gogus and Boucher (1998), indicates how much can be trusted to priorities derived from the comparisons. For example, if the first option is more important than the second option (preferred value 5) and the second option is relatively more important than the third option (preferred value 3), then it should be expected the first option to be evaluated much more important than the second option (preferred value of 7 or more). Comparison of two options is simple but when the number of comparisons increases, confidence of inconsistency of comparisons is not possible easily, so inconsistency ratio is calculated. If inconsistency ratio is <0.10, inconsistency of comparisons is acceptable and otherwise comparisons should be reconsidered. Steps of calculating inconsistency ratio (Gogus and Boucher, 1998).

Step 1: Fuzzy matrix data of paired comparisons is formed in the form of triangular numbers.

Step 2: Two matrices A^m and A^g are separated from the matrix of fuzzy paired comparisons. Matrix A^m contains the middle elements of triangular fuzzy numbers:

$$A^m = [m_{ij}] \qquad (1)$$

Matrix A^g contains the geometric mean of the lower and upper bounds of triangular fuzzy numbers:

$$A^g = [\sqrt{l_{ij}.u_{ij}}] \qquad (2)$$

Step 3: The relative weight vector of the matrix options is obtained and called the fuzzy weight vector.

$$w^m = [w_i^m], w_i^m = \frac{1}{n}\sum_{j=1}^{n} \frac{m_{ij}}{\sum_{i=1}^{n} m_{ij}} \qquad (3)$$

$$w^g = [w_i^g], w_i^g = \frac{1}{n}\sum_{j=1}^{n} \frac{\sqrt{l_{ij}.u_{ij}}}{\sum_{i=1}^{n} \sqrt{l_{ij}.u_{ij}}} \qquad (4)$$

Table 4: Random indices

N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RI^m	0	0	0.4890	0.7937	1.0720	1.1996	1.2874	1.3410	1.3793	1.4095	1.4181	1.4462	1.4555	1.4913	1.4986
RI^g	0	0	0.1796	0.2627	0.3597	0.3818	0.4090	0.4164	0.4348	0.4455	0.4536	0.4776	0.4691	0.4804	0.4880

Step 4 (Calculating consistency vector): Fuzzy weight vector elements are multiplied in the matrix of fuzzy paired comparisons and then the result is divided on the relative weight vector.

Step 5: Obtaining λ_m^{max}, λ_m^g average elements of consistency vectors creates λ_{max}^m, λ_{max}^g.

Step 6 (Calculating consistency index): Based on a formula that Mr. Saati had proven, the consistency index is defined as follows:

$$CI^m = \frac{\lambda_{max}^m - n}{n-1} CI^g = \frac{\lambda_{max}^g - n}{n-1} \qquad (5)$$

n is the n-1 number of options available in the n-1 problem.

Step 7 (Calculating the consistency ratio): Consistency ratio is obtained from the division of the consistency index on random index:

$$CR^m = \frac{CI^m}{RI^m} CR^g = \frac{CI^g}{RI^g} \qquad (6)$$

Both inconsistency ratios should be 0.1 or less to be acceptable the inconsistency of pair comparisons. Random indices for consistency ratio of matrix of middle elements and geometric mean matrix according to Gogus and Boucher method is specified in Table 4.

Aggregation of multi-expert opinion: Several operators have been proposed to aggregate fuzzy evaluations of decision makers for example, it can be named the operators of average, middle, minimum, maximum and combined operators. Since, the average operation for the aggregation method is used and this operation is more general than other operations, the geometric mean operator is used in the model. If the numbers An, ..., A1, A2 are triangular fuzzy, elements are represented by three letters, l, m, u, respectively then the mean of above numbers is calculated according to Eq. 9 (Meixner, 2009):

$$A_{ave} = \left(\sqrt[n]{\prod_{i=1}^{n} l_i}, \sqrt[n]{\prod_{i=1}^{n} m_i}, \sqrt[n]{\prod_{i=1}^{n} u_i} \right) \qquad (7)$$

Following Chang's procedure (extent analysis method), the value of S_k which is a triangular fuzzy number is obtained from the following equations for each of the rows of paired comparison matrix:

$$S_k = \sum_{j=1}^{n} M_{ki}^j \otimes \left[\sum_{i=1}^{m} \sum_{j=1}^{n} M_{ij} \right]^{-1} \qquad (8)$$

$$\sum_{j=1}^{m} M_{ij} = \left(\sum_{i=1}^{m} l_j, \sum_{i=1}^{m} m_j, \sum_{i=1}^{m} u_j \right), i = 1, 2, ..., m \qquad (9)$$

$$\sum_{i=1}^{m} n \sum_{j=1}^{n} M_{ij} = \left(\sum_{i} l_i, \sum_{i} m_i, \sum_{i} u_i \right) \qquad (10)$$

In these equations, k represents the number of line and i and j represent the options and indicators, respectively.

Following the Chang (1996)'s procedure, the magnitude degree of each element of levels is calculated separately then all elements are compared according to Eq. 11 and 12:

$$V(M_1 \geq M_2) = 1, \text{if } m_1 \geq m_2 \ V(M_1 \geq M_2) = \text{hgt}(M_1 \geq M), \text{otherwise} \qquad (11)$$

Magnitude of a triangular fuzzy number from k other triangular fuzzy number is obtained from Eq. 16:

$$\text{hgt}(M_1 \cap M_2) = \frac{l_2 - u_1}{(m_1 - u_1) - (m_2 - l_2)} \qquad (12)$$

Calculating weight of indicators in matrix of paired comparisons is done as:

$$V(M_1 \geq M_{2,...,k}) = V(M_1 \geq M_2) \text{and...and}(M_1 \geq M_k) \qquad (13)$$

Therefore, the final weight vector is calculated from Eq. 14:

$$w'(x_i) = \min\{v(s_i \geq s_k)\} \, k = 1, 2, ..., n, k \neq i$$

As can be seen, the final weight obtained in this method is non-fuzzy.

Computational results: In this study, after completing the AHP questionnaires by 5 experts and calculating the

Table 6: Relative weight of marketing mix elements

Criteria of marketing mix	Product	Price	Place	Promotion	People	Process	Physical evidence
Relative weight	0.291	0	0.092	0.369	0.063	0	0

Table 7: Final weight of sub-criteria of product

Sub criteria of product	Product attribute	Delivery	Warranty	Technology
Final weight	0.834	0.166	0	0

Table 8: Final weight of sub-criteria of place

Sub criteria of place	Distribution channel type	Distribution coverage
Final weight	0.7	0.3

Table 9: Final weight of sub-criteria of promotion

Sub criteria of promotion	Advertising	Sale promotion	Public relation
Final weight	0.8008	0.199	0

Table 10: Final weight of sub-criteria of people

Sub criteria of people	Employee	Customer
Final weight	0.7	0.3

Table 11: Final weight of sub-criteria of process

Sub criteria of process	Systematic procedure	Customer involvement
Final weight	0.7	0.3

Table 12: Final weight of sub-criteria of physical evidence

Sub criteria of physical evidence	Environment condition	Signs
Final weight	1	0

Table 13: Comparison of sub-criteria of marketing mix

Sub-criteria of marketing mix	Final weight
Product attribute	0.242
Delivery	0.0482
Warranty	0
Technology	0
Strategy	0
Distribution channel type	0.0645
Distribution coverage	0.028
Advertising	0.295
Sale promotion	0.074
Public relation	0
Employee	0.044
Customer	0.019
Mechanization	0
Customer involvement	0
Environment condition	0
Signs	0

inconsistency ratio of all paired comparison tables and ensuring the correctness of responses, geometric mean of opinions of experts is calculated according to Eq. 9. Then, preference matrix of fuzzy expansion method is formed using the MATLAB Software and the relative weights are determined and the final weight is obtained based on AHP method.

In Table 5, it can be seen that among the criteria of marketing strategies at the birth stage, product development has had the most importance.

Table 6 refers to the selection of appropriate marketing mix. According to the definitions of marketing strategy in the introduction stage of the product (birth), product and promotion are considered the essential factors for this period which require more investment. Although it is necessary to use seven mix elements in organization but in this period, price, process and physical evidence are less important.

Finally, after determining the relative weight of components of the hierarchical conceptual model presented in Fig. 1, by combining relative weights, final weight is calculated for sub-elements of marketing mix. As shown in Table 7-13 in the product area, sub-criterion of product attribute and delivery, in the place area, sub-criterion of Distribution channel type, in the promotion area, sub-criterion of advertising and sale promotion, in the people area, sub-criterion of employee, in the process area, sub-criterion of systematic procedure and in the physical evidence area, sub criterion of environment condition is more important.

CONCLUSION

Selecting appropriate marketing mix at the introduction stage of the product (birth) is important. In this study, after reviewing literature and field research, seven-dimensional marketing mix is selected and its elements are specified. After determining main criteria of introduction stage of the product (birth) and according to the expert's opinion and the fuzzy pair comparison (development method of Chang), the importance of each of mix elements is determined in this stage.

According to the results, advertising for introducing the product is of high importance in the birth stage. Product differentiation including design, quality, convenience and application at this stage, plays a significant role in advancing the strategic marketing objectives of organization. Other appropriate measures to implement marketing strategies include discounts, free gifts, selection of appropriate distribution channels and delivery of product to customer. All activities should be carried out by qualified and trained personnel.

This study can be extended to other stages of product life cycle and other marketing mix elements. Researchers can accurately examine different marketing strategies to executive level by adding hypotheses to problem. Organizations will be able to change this model according to the life cycle of products and strategies and to select marketing actions fit to industry and current conditions with more decisiveness and consequently they will have less risk in implementing strategies.

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