



## **Selection and evaluation of market segments using the fuzzy quality extension function approach**

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### Abstract

In this research, we prioritized market segments in the future bank. The method of work is to identify the requirements of technical requirements affecting these needs in the strength of the bank after determining the needs of segmentation and entry into the market segments. Using the approach to extend the function of fuzzy weight quality, the requirements and, consequently, the ranking of the requirements of the determination And finally, by determining the potential markets for ranking the market segments using the Topsis method, since there are ambiguous variables in the decision environment, fuzzy logic is used to increase the accuracy of the results. The method of data collection in this library and field research is a tool for collecting information from the field of questionnaires and interviews. Also, the statistical community of the expert group of senior managers of the future bank is formed in a team of five people from the planning, marketing, financial, executive, and credit sectors. Based on the results of this study, at first 6 requirements were determined, the most important requirements are: expected profit and required capital financing; in the next step, 7 strength points of the bank are defined as the requirements, the most important of which are respectively: Financial Stability, Experience and Innovation in Providing New Services Based on the results of Topsis among the eight potential markets for service development, large exporters and Iranian contractors in Iraq are luckier to influence the future bank.

Keywords: Expansion of Quality Function, Fuzzy Logic, Topsis, Ranking, Future Bank. **1. Introduction**

The logic of management considers a variety of principles and models for segmenting the market for specialized activities and utilizing the core capabilities of organizations. According to Winde and Cordozo in 1974, the segmentation of the industrial market is a logical development of the marketing concept that places the consumer at the center of marketing efforts and economic theory. McDonald and Pearce (2001) emphasize that in the market segmentation there is a decision-making area for organizations that need to define their strategic planning and marketing to develop interactions with the environment. (Hosseini et al., 2012)

Market segmentation is based on the assumption that customers, preferences and purchasing behaviors are different. This heterogeneity of customer purchasing behavior can be as a result of differences in product and consumer characteristics. Applying a segmentation approach will allow organizations to



handle this variety and heterogeneity by focusing their resources on a specific group of customers. Market segmentation also provides a strategic basis for other three-way communications development and marketing decisions; it distinguishes between customers; it helps to select market opportunities and environments; as a result, market marketing and marketing initiatives are more effective. it is possible. (Mortazavi et al., 2009)

Companies with a small market share and limited resources can use segmentation to focus on marketing capital through identifying, developing, and maintaining activities in market segments that are risky. Effective use of market segmentation helps develop and maintain a competitive advantage. Market segmentation is an analytical process that, if carefully and on the basis of revised marketing plans and programs, attracts customers, maximizes resources and creates a competitive advantage for the company. These are the main advantages of the market segmentation, which brings together the themes for the current and future product portfolio of the organization. (Dot et al., 2014: 124). The experience of using the partitioning program has revealed other benefits that help create a corporate culture by focusing more on the market and creating inter-organizational and transactional relationships.

Therefore, and considering that the future bank is the leading bank in providing services and can not focus on all customer groups, it is necessary to use a precise method to prioritize different market segments. In this research, using Quality Expansion and Topsis techniques will be implemented.

## **2. Theoretical Foundations of Research**

### **2.1. Market segmentation**

The division of the market into a process in which the target market of a product or service can be divided into groups of customers of that product or service that exhibits similar purchasing behaviors. One of the most important factors that has led to an increased focus on market segmentation in marketing and market strategy is increasing competition and the number of competitors. In most cases, the whole potential market for a product is more diverse or heterogeneous than a target market. Market segmentation is a process through which the whole potential market for a product is divided into smaller parts or components. Sections are created according to the customer grouping in terms of the same characteristics or requirements. The resulting sections are considered homogeneous according to these dimensions. That is, the potential buyers of each sector are similar to each other in terms of key dimensions than buyers of other sectors. The goal here is to identify groups that respond in the same way to marketing plans. (Architecture et al., 2014)

The main advantage of dividing markets is to allow marketers to better match the needs of different types of customers. The development of an appropriate marketing mix for the target market leads to the acquisition of competitive advantage for the company. This advantage is the matching of product design, advertising efforts, pricing and distribution with customer preferences. The division of the markets is done

in two steps. In the first step, the variables of division are selected and the market is divided according to this dimension. In this way, groups of customers are identified that require separate marketing combinations. The second step is to divide the market into sub-markets from the affected sectors. The retail markets of each sector are in line with its distinctive demographic and behavioral characteristics. After completing the division process, each section is evaluated according to its attractiveness for the company. The target markets of the company are based on this assessment, from this stage as the choice of target market. To identify market segments with homogeneous answers to marketing plans, three conditions must be met: (Mortazavi et al, 2009)

.1Dimensions or bases used to divide the market should be measurable.

.2Each market segment should be accessible through available channels. These channels include: advertising media, distribution channels and company sales force.

.3Each section must be large enough to be considered as profitable. The profitability of a sector is affected by many factors, including the nature of the company size and its pricing structure.

## 2.2Extending Quality Performance

The concept of quality development was first introduced by AACAO in 1966 and published in 1969 in the form of a scientific paper. The turning point of evolution in 1978 was accompanied by the publication of a book titled "Expansion of Quality Performance" by Dr. Yojo Akau and Shigeru Mizuno. The development and enhancement of the QFD theoretical concepts and its practical deployment in the Japanese industry in 1980, culminating in the awarding of the Deming Award to KaiAbA, was due to the proper use of this method (Sediq et al., 2009)

QFD, as one of the newest methods of quality engineering, has begun to study the market and identify product customers, and in its review and analysis process, while identifying the needs and requirements of customers, they try to consider them in all stages of design and production. In other words, the main philosophy of using QFD is to apply and take into account the quality requirements of the customer at different stages of product development. Therefore, all the features and specifications of product design are made according to the views of the "customer" and "consumer", and the role of the organization's experts in designing a new product and service is not more than a "translator"; translators using a method In the name of the QFD, customers' demands translate into somewhat noticeable features in design data.

A number of QFD key issues are as follows:

QFD is a planning process, not a problem-solving or analysis tool.

Customer needs and wishes are matrix inputs. The process cannot start without input.

QFD essentially forces the organization to communicate directly with the product consumers.



The QFD uses a matrix to explain the vital information of the project structurally in summary form.

Facilitate the collection of information in the matrix structure, evaluation activities, mutual reviews and analysis. This technique helps in setting competitive goals and determining priority issues for the organization.

The QFD matrix has two outputs. From the first output, competitive goals are extracted for key customer-related activities. From the second time, special priority items are selected for those parts that have a special emphasis on them. An effective response to the goals and priorities selected will have an impact on increasing customer satisfaction .

### **3. Literature review**

Laljini et al. 1396 Evaluation of the attractiveness of corporate banking market segments with AHP approach According to managers of 12 industry banks with the highest score, they were selected as the target markets of corporate banking. Khazaei, 2015. Selection of market segments in Internet marketing based on market effective metrics. Impact of the Internet on Porter's Model 5 for analyzing the competitive level of the organization is due to the fact that the Internet provides opportunities and threats to all organizations. But what matters is how the new technology is used by the organization, because with proper use, the organization can achieve competitive advantage. Secondly, the network analysis process for evaluation and selection Market segments, in order to interfere with the interconnection between the criteria and the criteria Criteria are used. It should be noted that these internal communications within an organization are determined by decision makers and experts and are evaluated. Architecture and Associates 2014 Division of the market of services of private sector sports units based on customer perceived quality The results showed that this set can be used by demographic characteristics of individuals including age, gender, marital status and number of membership periods, market of its customers To divide into several sections and thus take advantage of it in their business. However, segmentation was not significant based on the number of referrals per month and income. Bagheri et al. 2013 Identification and Prioritization of the Factors Affecting the Selection of International Entry Procedures (Case Study of Large Automobile Manufacturers) (Comparison of the importance of each of these factors for two major automobile companies in the country and the attention paid to these factors in projects Entering global markets to boost sales in different markets. Dehdashty and Jafari 2012 Factors Affecting the Selection of Export Markets in Iran's Electricity Industry The market potential was identified as the most important dimension in selecting target markets. Subsequently, the dimensions of the legal, political, infrastructural and economic dimensions were the most effective dimensions. Finally, culture was considered as an unimportant dimension in the selection of export target markets of the Iranian electricity industry. Malek ethanagh et al. 2011 Identification and ranking of performance measurement indicators in entering the foreign markets. Findings indicate that the scorecard scalar balances are respectively the success rate, including innovation and development, 62%, customer 52%, business processes 47% And the financial is 24%. Mortazavi et al. 2009 Distribution of



Mashhad Banks Market Based on the Benefits of Customers The results of factor analysis revealed that 61 criteria for selecting a bank are in the form of 9 factors, which together account for more than 65% of customers' behavior in choosing a bank Explain. Regarding the identified factors, two-stage cluster analysis was used. The results showed that customers were divided into 3 clusters according to the similarity of their answers to the 9 main factors. Also, the results of the two-pearson test showed that clusters in terms of education level, marital status, family income , Personal income and Internet usage are different.Hamidizadeh and Sharifi 2008 Specialty Approach Patterns in University Activities with Industry: Necessities and Challenges of Market Segmentation The results of this study show that the variables of the studied model have a role to play in market segmentation of the petrochemical industry and these bases are the basis for segmentation. The petrochemical industry is effectively influenced by the design of the model. Basically, the achievement of research shows that, in order to promote the level of the effectiveness of the three-way communication between industry, academia and government, the market segmentation of the activities of these three sectors is necessary to determine which one has a mission, and each part of dealing with matters not related to the field Avoid your activity.Rajavi and Shiazadeh 2008 Determining the criteria for market attractiveness and selecting the target market First, we will refer to research on market attractiveness criteria with respect to market segmentation, investment management, and competitive strategies, and then introduce some criteria for selecting a target market. Is agreed upon by most marketing experts.Zawadaskass et al. 2017 To evaluate and select the market sector based on the application of fuzzy AHP and COPRAS-G methods This paper presents a new approach that works with the fuzzy analysis of the hierarchy process (FSHP) and the COPRAS method.

Aqdghi and Ali Mardani 2016 Target Market Selection Methods Based on Market Sector Valuation Using Multi-criteria Decision Making A new MADM combination method, including AHP and TOPSIS, has been proposed to bring an appropriate target market. The AHP is used to more accurately calculate the weight of each criterion, and TOPSIS is used to rank target market options from best to worst.The 2015 evaluation of market segments and the process of choosing the method of entering the market has classified the factors affecting market selection and market entry into three groups: internal factors, external factors and combinational factors.Dot et al. 2014 A new, integrated fuzzy QFD approach for evaluating and selecting market segments. The proposed approach presents the characteristics of which market segments (what) should be in line with the company's business strengths (how) Identifies. In the proposed approach, the relative importance of "what", the degrees of solidarity between "how-what", the weights derived from "how" and the potential impact of each market segment, are assessed through linguistic values. Then, the functions of average rank and average weights are defined and the fuzzy overhead is used for the final ranking of the options.Oe and colleague 2016The use of fuzzy competitive analysis method to evaluate and select the market segment for the shifting of differences between market segments to a specific environment provides a better understanding of the problem of decision making and individual decision-making behavior. The final solution is to identify the best part of the market for further development and negotiation. Junifazadeh and Mirza Zadeh 2011 Providing a Fuzzy Delphi method for market evaluation and market segmentation using fuzzy logic can result in the accuracy of the results

in multi-criteria decision making to the extent The use of the appropriate Portfolio portfolio can be a good orientation to marketing and R & D activities in this regard. Model 2003 is the process of choosing between International: A Qualitative Study of Australia's Successful International Business This model, if not attractive market in terms of size, will be rejected if it has enough charm, charisma structure also been investigated. Structural attractiveness is also assessed on the basis of cost, structural adjustment, market entry policy and firmware policies. Kigane 1999 Global Marketing Management has introduced three basic criteria for evaluating global target markets. The current size of the market and its expected potential growth, potential competition in the market, and target market compatibility with the overall goals of the company and access to it are from the criteria for market assessment. Sarabia 1996 Model for the assessment and selection of market segments has four stages in order to assess and has suggested market comparisons. In the first step, the profit level of each sector is calculated for the firm. After a comprehensive study of this stage, in the second stage, the firm's ability to make the appropriate decision is evaluated. In the third stage, the possible effects of the firm's decisions are evaluated and in the fourth stage, using the evaluation matrix

#### 4. Research Method

In this study, the survey method (descriptive-applied) is used. In fact, it can be said that this research is applied in terms of the purpose and is descriptive in terms of its method of doing.

#### 5. Society and statistical sample

In this research, the statistical community is the marketing and research and development experts in the future bank, and the opinions of all experts in this research are used and sampling is not done in this field that these people in the expert group have their opinions through the questionnaire and Or an interview that is shown in Table 2 of these individuals.

Table 2: Expert Group Decision Making at Future Bank

department	expert
plan	1
Marketing	1
Financial	1
Executive	1
Credits	1

Total	5
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## 6. Information gathering method

In order to collect literature and relevant records, this paper examines books, journals, articles and Internet resources related to the topic by using library methods. On the other hand, field methods such as questionnaires and interviews have been used to collect the required data in order to create and complete the house of quality and other required data.

## 7. Information Collection Tool

The information gathering tool in this research is as follows:

### 1. Questionnaire

As mentioned earlier, field surveys such as interviews with experts from the questionnaire were used to collect data related to product marketing. The questionnaires used in this study are three forms that have been developed for different purposes:

Questionnaire 1: To collect effective factors on market growth in the future bank

Questionnaire No. 2: To assess and obtain the importance of the requirements (Strengths of Future Bank) extracted from form No. 1 as linguistic variables

Questionnaire No. 3: To assess the different parts of the market, the bank will be more likely to penetrate them.

### 2. Interview card

As it was told, in order to determine the requirements for marketing needs in the future bank, the expertise of the expert team will be used, which will be used by interviewing.

## 8. Data analysis method

The data analysis method in this study is based on 7 steps:

Stage 1 (Determining Market Growth Factors):

At this stage, using the views of the experts in marketing and R & D in the future bank, factors are identified that are important in marketing and entering the new market for the bank.

Step 2 (Determine the Fuzzy Weight of Needs)



At this stage, using the range of fuzzy language variables (Figure 1-3), the opinions of each sales expert on the importance of each of the factors are evaluated using questionnaire 1 and finally, with the averaging of the fuzzy significance of each Of needs.

Step 3 (Specify technical requirements):

At this stage, by holding Delphi and PhD meetings, technical requirements (strengths of the future bank) will be determined using the consensus of the expert team formed in the future bank.

Step 4 (Completion of Quality House):

At this stage, each of the experts will be asked to complete the house of quality using the range of fuzzy linguistic variables, and the comments will be quantitative from the quantitative values, and ultimately, by completing the average quality of the house's final views.

Step 5 (Fuzzy Weight Determination and Technical Requirements Ratings):

At this stage, using the following equations, the fuzzy weight of the technical requirements are determined:

$$RI_j = \sum_{(i=1)}^n \left[ w_i \times R_{ij} \right] \quad (1)$$

Where  $RI_j$  is fuzzy weight, and finally, using the Central Fuzzy Degradation Relationship, we apply the final ranking of the requirements, which is done using the Excel computational software.

Step 6 (Determine the different market segments):

At this stage, using expert opinions, the various sections that will be evaluated will be determined, which will include different groups of geographies and work.

Step 7 (Market Sector Ratings)

At this stage, the matrix is a benchmark option for the segmentation of different market segments, in which the matrix of options is different and the criteria are the success factors in the future bank and the strengths of the bank, and the ranking of market segments using Fuzzy Topsis is done, the steps are explained and done by Excel.

## 9. Findings

In this section, the research findings are reported. The findings should be accompanied by a table, graph, figure and presentation of figures and figures in Persian, as well as description and analysis of the data.

### 9.1. Determine the requirements



First, using market research and interviewing experts, the goals of market segmentation are determined, in which 6 goals were identified:

1. Ease of entering the market
2. Market growth
3. Geographic focus
4. Competition intensity
5. Capital required
6. Expected profit

### 9.2. Determine the weight of the requirements

At this stage, experts are asked to take action on determining the importance of each requirement using the linguistic-fuzzy scale, with the comments and meanings shown in Table 3.

Table 3 :Experts' Views on Requirements and Their Fuzzy Mean

criteria	Expert opinion					Average fuzzy comments
Provide capital needed	H	VH	VH	H	H	0.68,0.88,1
expected profit	VH	VH	H	VH	H	0.72,0.92,1
Intensity of competition	M	H	M	M	M	0.36,0.56,0.76
Market growth	M	L	M	M	L	0.18,0.38,0.58
Ease of access to the market	H	M	H	M	M	0.42,0.62,0.82
Geographic focus	L	L	H	M	M	0.24,0.44,0.64

According to Table 3, we can determine the fuzzy weight of each of the criteria, and based on the average of the fuzzy weights, and the decaying of it, one can determine the ranking of each of the criteria.

For example, the weight (importance) of the required capital is calculated as follows:

$$(0.68,0.88,1)=((0.6,0.8,1)+(0.8,1,1)+(0.8,1,1)+(0.6,0.8,1)+(0.6,0.8,1))/5$$

### 9.3. Determine the technical requirements

After determining the requirements of segmentation of the market at this stage, using the review of previous research and the use of experts' opinion, seven technical requirements were identified:

1. experience
2. Financial stability
3. System Quality Certificate
4. Flexibility in response to customer needs
5. Offshore Services Provided
6. Innovative ability to provide new services
7. Geographic location

Each of these requirements is addressed to cover one or more requirements. For example, in the case of geographic location, one can say that if the bank has a good geographical location it can cover the focus in the geographic area as a requirement, and this The view of this is a requirement that is similar to other requirements in relation to other requirements.

### 9.4. Formation Quality House

At this stage, we use expert opinions to build a quality house, which is presented in Table 4.

Table 4: Fuzzy Quality House Matrix

	experience	financial stability	Quality management system	Flexible in response to customer needs	overseas services	Innovative capability in providing new service	Geographical location
Provide capital needed	0.38, 0.88, 1.68	0.38, 0.96, 1.76	0.18, 0.38, 0.06	0.44, 0.64, 0.24	0.12, 0.32, 0	0.74, 0.94, 0.54	0.06, 0.26, 0.46
expected profit	0.38, 0.58, 0.18	0.74, 0.94, 0.54	0.38, 0.96, 1.76	0.26, 0.46, 0.06	0.56, 0.76, 0.36	0.12, 0.32, 0	0.24, 0.44, 0.64
Intensity of	0.68, 0.88, 0.48	0.38, 0.58, 0.18	0.26, 0.46, 0.06	0.38, 0.92, 1.72	0.22, 0.42, 0.06	0.38, 0.96, 1.76	0.54, 0.74, 0.94

competition							
Market growth	0.90, 0.88, 1.68	0.90, 0.92, 1.72	0.32, 0.52, 0.12	0.90, 0.92, 1.72	0.16, 0.36, 0.0	0.56, 0.76, 0.36	0.90, 0.08, 0.28
Ease of access to the market	0.74, 0.94, 0.54	0.74, 0.94, 0.54	0.22, 0.42, 0.06	0.44, 0.64, 0.24	0.04, 0.24, 0.0	0.6, 0.8, 1.0	0.90, 0.04, 0.24
Geographic focus	0.62, 0.82, 0.42	0.90, 0.92, 1.72	0.08, 0.28, 0.0	0.90, 0.88, 1.68	0.56, 0.76, 0.36	0.90, 0.88, 1.68	0.68, 0.88, 1.0

### 9.5 Determine the weight of the requirements

At this stage, using the relations governing the home matrix, the quality of the weight of each requirement is obtained that, with the de-fuzzy of the weight of the requirements, the definite weight and, consequently, the rank of each of the requirements are determined, as shown in Table 5

Table 5: Fuzzy and definitive weight of necessity and importance

rank	Definite weight	Fuzzy weight	
2	2.62	1.21, 2.57, 4.12	Experience
1	2.94	1.49, 2.95, 4.37	Financial stability
6	1.54	0.65, 1.48, 2.55	System Quality Certificate
4	2.19	0.86, 2.15, 3.6	Flexibility in response to customer needs
7	1.20	0.37, 1.08, 2.29	Offshore Services Provided
3	2.46	1.12, 2.39, 3.92	The ability to innovate in providing new services
5	1.59	0.57, 1.49, 2.81	Geographic location

### 9-6 Assessment of potential markets

At this stage, the objective of evaluating potential markets and ranking the market segments is evaluated in each of the criteria. For this purpose, experts have been used to examine the penetration into 8 potential markets, with the average expert opinion shown in Table 6.

Table 6 Average expert opinions on potential markets

Potential Markets	experience	financial stability	Quality management system	Flexible in response to customer needs	overseas services	Innovative capability in providing new service	Geographical location
Car Leasing Companies	0.96, 1) (0.76)	0.68, 0.88) (0.48)	0.56, 0.76) (0.36)	(0.0, 0.2)	0.2, 0.4) (0.0)	0.92, 1) (0.72)	0.5, 0.7) (0.3)
Special groups such as lawyers, doctors and engineers	0.82, 0.94) (0.62)	0.2, 0.4) (0.0)	0.5, 0.7) (0.3)	0.84, 1) (0.64)	0.2, 0.4) (0.0)	0.88, 1) (0.68)	0.38, 0.58) (0.18)
Small exporters	0.38, 0.58) (0.18)	0.44, 0.64) (0.24)	0.38, 0.58) (0.18)	0.74, 0.94) (0.54)	0.8, 0.88) (0.6)	0.2, 0.4) (0.0)	0.5, 0.7) (0.3)
Large Exporters	0.5, 0.7) (0.3)	0.84, 1) (0.64)	0.56, 0.76) (0.36)	0.5, 0.7) (0.3)	0.84, 1) (0.64)	0.5, 0.7) (0.3)	0.8, 0.88) (0.6)
Businessmen and marketers	0.56, 0.72) (0.4)	0.16, 0.36) (0.12)	0.68, 0.88) (0.48)	0.38, 0.58) (0.18)	(0.0, 0.2)	0.32, 0.52) (0.12)	0.82, 0.94) (0.62)

Iranian contractors in Iraq	0.86 <sub>و</sub> 0.94) (0.66 <sub>و</sub> )	0.6 <sub>و</sub> 0.76) (0.4 <sub>و</sub> )	0.84 <sub>و</sub> 0.88) (0.64 <sub>و</sub> )	0 <sub>و</sub> 0.2 <sub>و</sub> 0.4) ( )	0 <sub>و</sub> 0.96 <sub>و</sub> 1) (.76 <sub>و</sub> )	(0.8 <sub>و</sub> 1 <sub>و</sub> 1)	0 <sub>و</sub> 0.2 <sub>و</sub> 0.4) ( )
Iranians residing in other countries	0.56 <sub>و</sub> 0.76) (0.36 <sub>و</sub> )	0.44 <sub>و</sub> 0.64) (0.24 <sub>و</sub> )	0.56 <sub>و</sub> 0.76) (0.36 <sub>و</sub> )	0.38 <sub>و</sub> 0.58) (0.18 <sub>و</sub> )	0.68 <sub>و</sub> 0.88) (   0.48 <sub>و</sub> )	0 <sub>و</sub> 0.5 <sub>و</sub> 0.7) (.3 <sub>و</sub> )	0 <sub>و</sub> 0.92 <sub>و</sub> 1) (.72 <sub>و</sub> )
Tourism companies	0.26 <sub>و</sub> 0.46) (0.6 <sub>و</sub> )	0.72 <sub>و</sub> 0.88) (0.52 <sub>و</sub> )	0.7 <sub>و</sub> 0.82) (0.5 <sub>و</sub> )	0 <sub>و</sub> 0.5 <sub>و</sub> 0.7) (.3 <sub>و</sub> )	0 <sub>و</sub> 0.5 <sub>و</sub> 0.7) (.3 <sub>و</sub> )	0 <sub>و</sub> 0.2 <sub>و</sub> 0.4) (.12 <sub>و</sub> )	0.44 <sub>و</sub> 0.64) (0.24 <sub>و</sub> )

### 9-7 ranking potential markets using fuzzy tops

At this stage, the review of the fuzzy tops steps is carried out step by step in the topsis process. The goal of ranking the potential markets according to the weight of the business factors and the matrix is the criterion for the assessment of potential markets, initially multiplied by the fuzzy weights obtained from The matrix of the quality house in the matrix of market evaluation, we form the matrix of the option-criterion of weights, which is shown in Table 7.

Table 7: Option-criterion matrix for decision making

Potential Markets	experience	financial stability	Quality management system	Flexible in response to customer needs	overseas services	Innovative capability in providing new service	Geographical location
Car Leasing Companies	0.246 <sub>و</sub> 0.412) (0.92 <sub>و</sub> )	0.7 <sub>و</sub> 0.2 <sub>و</sub> 3.84) (2 <sub>و</sub> )	0.83 <sub>و</sub> 1.94) (0.24 <sub>و</sub> )	(0 <sub>و</sub> 0 <sub>و</sub> 0.72)	0.22 <sub>و</sub> 0.92) (0 <sub>و</sub> )	0.2.2 <sub>و</sub> 3.92) (.81 <sub>و</sub> )	0.1 <sub>و</sub> 0.74 <sub>و</sub> 1.96) (7 <sub>و</sub> )
Special groups such as lawyers, doctors and	0.2.1 <sub>و</sub> 3.87) (.75 <sub>و</sub> )	0.59 <sub>و</sub> 1.74) (0 <sub>و</sub> )	0.74 <sub>و</sub> 1.78) (0.19 <sub>و</sub> )	0.1.8 <sub>و</sub> 3.6) (.55 <sub>و</sub> )	0.22 <sub>و</sub> 0.92) (0 <sub>و</sub> )	0.2.1 <sub>و</sub> 3.92) (.76 <sub>و</sub> )	0.1 <sub>و</sub> 0.57 <sub>و</sub> 1.63) (0 <sub>و</sub> )

engineers							
Small exporters	و0.97 و2.39) (0.22	و1.29 و2.79) (0.36	و0.56 و1.48) (0.12	و1.59 و3.39) (0.46	و0.86 و2.02) (0.22	و0.47 و1.56) (0	0.1 و0.74 و1.96) (7
Large Exporters	و1.28 و2.88) (0.36	و2.47 و4.37) (0.96	و0.93 و1.94) (0.24	و1.07 و2.52) (0.26	و0.90 و2.29) (0.23	و1.19 و2.74) (0.33	0.3 و1.19 و2.47) (4
Business men and marketers	و1.43 و2.97) (0.48	و0.47 و1.57) (0.18	و0.3 و1 و2.24) (2	و0.82 و2.09) (0.15	(0 و0 و0.45)	و0.77 و2.04) (0.13	0.3 و1.22 و2.64) (5
Iranian contractors in Iraq	و2.21 و3.87) (0.80	و1.77 و3.32) (0.60	و1.24 و2.24) (0.42	و0.43 و1.44) (0	و1.03 و2.29) (0.28	و2.39 و3.92) (0.89	(0 و0.30 و1.12)
Iranians residing in other countries	و1.43 و3.13) (0.44	و1.29 و2.79) (0.36	و0.82 و1.94) (0.24	و0.82 و2.09) (0.16	و0.73 و2.01) (0.18	و1.19 و2.74) (0.34	0.4 و1.37 و2.81) (1
Tourism companies	و0.67 و1.89) (0.08	و2.12 و3.85) (0.78	و1.03 و2.09) (0.33	و1.07 و2.52) (0.26	0 و0.54 و1.6) (.11	و0.47 و1.57) (0.13	0.14 و0.66 و1.8) (

By using the fuzzy normalization relation, we will attempt to normalize the fuzzy option-matrix matrix. Using the Euclidean distance, we set the distance between each of the potential markets . from the ideal and anti-ideal options, as shown in Table 10

Table 9: differs from ideal and anti-ideal

Potential Markets	Distance from ideal	Distance from anti-ideal
Car Leasing Companies	3.679967	2.504917
Special groups such as lawyers, doctors and engineers	3.668359	2.446856
Small exporters	3.783279	2.149856

Large Exporters	3.346034	2.657911
Businessmen and marketers	3.972488	2.046352
Iranian contractors in Iraq	3.434796	2.708106
Iranians residing in other countries	3.537848	2.411857
Tourism companies	3.786954	2.147373

According to Table 9, it can be said that each potential market is far from the ideal option and the distance from the anti-ideal option, which is chosen based on the market that has the greatest distance from the anti-ideal option and Have the least distance from the ideal option .

Finally, the coefficient of proximity and rank of each market segment is determined, as shown in Table 10.

Table 10: Ranking and Proportionality of each market segment

Potential Markets	Coefficient of proximity	rank
Car Leasing Companies	0.405006	4
Special groups such as lawyers, doctors and engineers	0.400126	5
Small exporters	0.362347	6
Large Exporters	0.442694	1
Businessmen and marketers	0.339991	8
Iranian contractors in Iraq	0.440851	2
Iranians residing in other countries	0.405374	3
Tourism companies	0.361856	7

The coefficient of proximity is determined by the distance from the anti-ideal divided by the total distance from the ideal and the anti-ideal, which can be used to determine the ranking of potential markets.



## 10. Discussion and Conclusion

In this research, we evaluated different sections of the Future Bank using a combined approach to quality development and top-ups to assess market segments. Firstly, market evaluation needs were determined using expert opinions and review of previous research. In this regard, 6 needs the main needs identified are: expected profits and required capital financing, so that the bank is trying to enter the new markets to penetrate the market, which has a good financial attraction, which, given the current risk of different markets for these needs Totally justified. Also, by reviewing the technical requirements affecting the needs, the most important requirements are: financial stability, experience, ability to innovate in providing new services. Regarding financial stability, given the fact that the bank is one of the first private banks in the country and has sufficient stability in the provision of customer service, it is also a relatively appropriate experience for this bank to experience the provision of modern banking services and foreign exchange services. It determines the target market of the bank, and the bank can enter new markets based on these criteria. According to Topsis's results among the 8 potential markets for service development, large exporters and Iranian contractors in Iraq are more likely to be affected by the bank. In the case of these two parts of the market, it can be said that at present, and considering post-sanctions conditions in the country, the sectors that could not previously use these services are among the areas in which the bank can influence them. Take up Also, the branch of the future bank in Iraq can be of great help in providing services and expanding the future market of the future bank, which suggests offering special services to Iranian contractors based in Iraq and increasing the bank branches in Iraq. In order to complete the results of this research, it is recommended that other researchers take steps to: Implementation of this research in other banks for the issue of market selection. Determining the probable relationship between needs and determining the weight of needs using methods such as hierarchical analysis or network analysis. Using other methods in the final ranking of market segments and comparing the results with the results obtained in this research according to the Fuzzy Topsis method. Use of different spectra such as trapezoidal fuzzy numbers and compare results with the results obtained in this research. Market segmentation, for example, the segmentation of foreign markets or domestic markets

## 11. Resources

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