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Identifying and prioritizing the strategic issues of Iran's food and beverage industry with a fuzzy Delphi approach and providing solutions to solve these issues

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ABSTRACT

one of the important indicators of development and also a basic condition for improving the level of well-being in any society is people's access to all kinds of food and safe water, as far as no country can carry out its development programs without providing safe and accessible food and drink. Follow for different sections of society. Therefore, this research seeks to identify the strategic issues of the food and beverage industry and prioritize them. This research is applied in terms of purpose, descriptive-survey in terms of data collection, and mixed mixed research in terms of research method. To identify strategic issues in Iran's industry, the review of authentic texts and reports and in-depth interviews with experts are used. After collecting information using the open coding method, the collected data were analyzed and strategic statistical issues were prioritized using the fuzzy Delphi approach. The result of the research indicates that the most important strategic issues of the industry are the weakness of the distribution system, the weakness of the banking system in providing facilities, the high rate of inflation, the inappropriate distribution of the establishment of transformation and complementary industries without regard to the potential of the agricultural sector, and the low productivity of human resources.

1. Introduction

According to the World Economic Forum, the industrial sector is the main driver of growth, success and innovation of countries. In addition to creating added value, this sector will lead to more employment than other sectors of the economy. Added value, job creation, stimulation of innovation and response to consumer needs are the key factors of long-term and sustainable economic growth. The strong flow of innovation in the field of raw materials, information technology and production and manufacturing processes, creating new opportunities for designing and manufacturing new products and services are among the things that will lead to the country's economic growth through the industry sector. In advanced economies, the industrial sector drives innovation, exports and productivity growth. Developing countries are also considered as the driving force of global economic growth due to the demand for industrial goods and their importance in terms of participation in the supply chain [1].

One of the most important industries in every country, considering its role and position in development, is the food and beverage industry. Food industries have a high reproduction rate in creating employment and added value, and also have an effect on increasing income, reducing waste, improving the quality of manufactured products, stimulating the increase in demand for agricultural products, presence in global markets, and business prosperity. One of the indicators of development in any country is people's access to all kinds of food, calories and protein, because the role of supplying food and beverages in the development process of any country or society is obvious and no country can Follow development plans without providing healthy and accessible food and drink for different sections of the society. Therefore, the role of the food and beverage industry in providing welfare and promoting development indicators is unique and fundamental. The small share of the food industry in the production of 90 million tons of agricultural products in Iran, as well as the closure or activity below the capacity of some food industry units, along with the high volume of food product imports, indicate the existence of various strategic issues in this industry. It is easy to understand that in order to strengthen any industry, it is necessary to emphasize its strengths and improve its weak points or those that can be improved. The food and beverage industry is not an exception to this rule, because based on repeated reports from the Majlis Research Center as well as the Ministry of Security, it has been repeatedly emphasized that the food and beverage industry in its various sectors is as it should be. It has not been able to use all its capacities, therefore, the strategic issues of this important industry should be accurately identified and prioritized based on a suitable approach to these issues in order to take into account the sensitive situation of this industry and also the efficient use of time. And the resources should pay serious and urgent attention to the priority issues and the provided solutions should be used to meet their priority. Therefore, in this research, we intend to first identify the strategic issues of the food and beverage industry, and then use the fuzzy Delphi approach to prioritize these issues and provide solutions based on the findings of the research to resolve these issues.

2- Theoretical bases

2-1- Production of food products and types of beverages

Among the food product production groups in the ASIC classification, we can refer to the items mentioned in Figure No. 1.

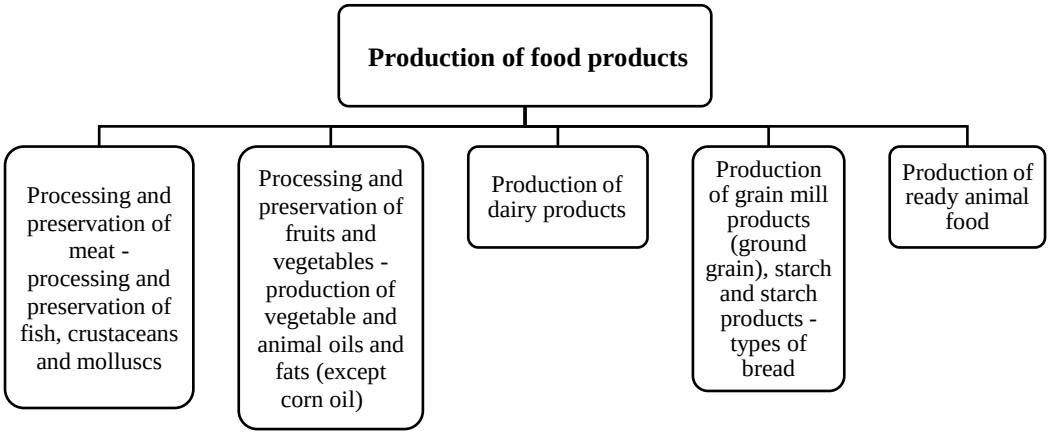

Figure 1: Production of food products in ASIC classification

Food industry refers to the sciences and industries in which plant and animal food raw materials are produced, harvested and processed and prepared for consumption. Food is perhaps the first thing that humans have taken from nature. The weight of the scale of life and death is the same in two kaffas, and its weight in each kaffa determines the importance of that kaffa. This strategic product is the first word of this century. If in the last century, oil was the reason for the superiority of a country over others, but today the great theorists of the world consider the country that owns food to be the victorious superpower. This strategic product needs new production methods. In another definition, food industry refers to a set of sciences and techniques that pay attention to the physical, chemical, and biological quality of agricultural products, both vegetable and livestock, in terms of transformation and storage, and the matter of collection, processing , transformation, completion and storage and transportation of these products are investigated. Food industry is one of the industries that play a significant role in providing basic and primary demand of societies. This category of industries are actually suppliers of consumer goods and receive and process raw materials and inputs of the agricultural sector. Based on the classification of Sarkin and Chenri, this group of industries is considered one of the beginning industries, therefore the income elasticity of demand for its products is insignificant [2]. The variables of energy consumption, investment and labor productivity have a positive and significant effect on the production value of the sub-sectors of Iran's food and beverage industries, and the effect of energy consumption is significant [3].

The establishment of food companies in Iran has greatly contributed to the economic prosperity of this country because Iran is one of the rich countries in the field of agriculture that can meet the food needs of its people in all months of the year. While some countries in the world do not have the necessary raw materials for food production and are forced to import raw materials from other countries for production. From the production groups of various types of beverages in the ISIC classification, we can refer to the items mentioned in Figure No. 2.

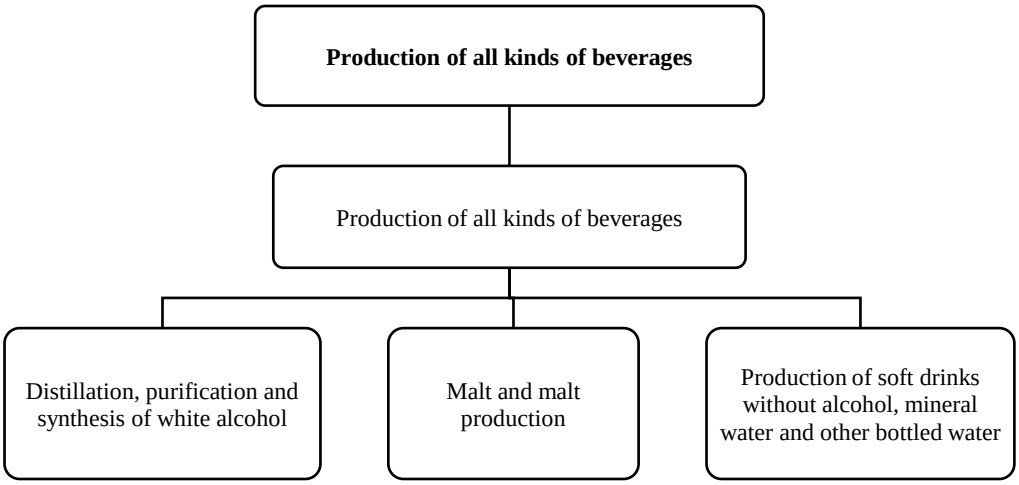

Figure 2: Production of all kinds of beverages in the classification of ISIC

In general, drinks follow two main categories of cold drinks and hot drinks. In a simple classification, cold drinks are divided into two categories, carbonated and non-carbonated. These drinks include soft drinks, beer, mineral water, juice and fruit extract, syrup and buttermilk. The beverage industry, especially cold drinks in Iran, has a better history, reputation and turnover compared to other food industries. The presence of various products and brands of drinks in stores indicates this. Among the types of cold drinks common in the country, soft drink holds the first place. According to the available documents, the first soft drink factory in Iran was built by a person named "Mirzai Tony". Later, due to bankruptcy, this factory was restarted with the investment of the Sahakian brothers, one of the famous Tabriz capitalists. This factory can be considered the largest non-alcoholic beverage production factory. After that, Zamzam company entered this field and went through many ups and downs. Today, innovations in the beverage industry have led to the significant growth and development of non-alcoholic beverages. Undoubtedly, having the right equipment plays an important role in the success of beverage factories. Therefore, the up-to-dateness of these equipments will be the key to success and increasing the quality of products. Currently, various beverage industries are operating in the country, which provide a significant part of domestic demand [4].

According to Figure 3, the global volume of non-alcoholic beverages market between 1392 and 1397 witnessed an upward trend, which indicates an

increase in the share of non-alcoholic beverages in the consumption portfolio of families at the international level. .

Figure 3: World volume of non-alcoholic beverages market in Iran

2-2- Economic position of food and beverage industry in Iran

The food and beverage industry is one of the important economic industries that contributes significantly to the GDP and also increases employment in the country. The added value of this sector has increased from 9336 billion Rials in 2015 to 343111 billion Rials in 2018. Also, the number of people working in this sector has increased from 121,284 in 2015 to 315,900 in 2018, which shows an annual growth rate of about 6% in the employment generation of this industry. According to the evidence obtained for the industry sector, the food industry attracted almost 17% of employment in 2018, while its share of production was equal to 12%, so the main issue for the industry sector is the disproportion between employment and Added value. The evidence of estimates shows that the surplus employment in Iran's industrial sector in 2018 was equal to 1378 thousand people, among which 19% of the surplus employment is in the food industry sector, and it had the highest employment inefficiency, which is equal to 267 thousand people. have been. In addition, based on the findings of the current research, the inefficiency of production in 2018 for the food industry is equal to 4.19% of the total added value of the industry, which is equal to 252 thousand billion rials for the food industry.

A look at the export statistics of Iranian Customs shows that dairy products, sweets, chocolate and biscuits, tomato paste, saffron, fruit juice and concentrate, animal feed, poultry and aquatic products, and pasta were often the most important export products of Iran's food industry during this period. Is. The products of Iran's food industry are exported to more than 120 countries of the world, the neighboring countries, Central Asia, the Persian Gulf and European countries such as Spain, Germany and Poland are among the main export destinations of the products of this industry. But the noteworthy point here is that according to the latest statistics, more than half of the country's agricultural and food exports are made to the countries of Iraq, Afghanistan and the United Arab Emirates, which indicates the failure of the Iranian food industry to take a higher share of the market of other countries and concentrate more than The size is on the markets of neighboring countries, which is expected to continue to focus on the markets of neighboring countries due to the return of sanctions to the country. In the field of import, however, according to the policies taken by the government, the import of food products of the country is mainly limited to basic goods whose domestic production does not meet the needs and domestic consumption. According to the latest analysis of the National Center for Strategic Studies of the Iranian Chamber of Commerce, of the country's agricultural and food import statistics in 2017, 20 million and 485 thousand tons of agricultural and food industry products worth 10 billion and 841 million dollars were imported into the country, which is 25% of imports. has appropriated the country. The point here is that more than 90% of the country's food import value is allocated to the basic commodities of corn, rice, oilseed meal, vegetable oil, soybeans, barley and all kinds of fruits [5].

3- Research background

Sohaili et al. [6] in a study entitled "Investigating the relationship between efficiency and industrial concentration in Iran's food and beverage industry" showed that increasing concentration reduces efficiency in Iran's food and beverage industry. Therefore, in order to increase efficiency in the food and beverage industry, policies should be aimed at reducing concentration in this industry.

Sadraei et al. [7] in a study entitled "Investigating the effect of advertising and industrial concentration on profitability in Iran's food and beverage industry" came to the conclusion that the policies that are chosen to improve the market structure include policies Reducing barriers to entering the market and reducing industrial concentration can significantly affect the behavior and performance of companies in the food and beverage industry. These policies ultimately lead to the improvement of the competitive environment in the market, which can be seen to increase the welfare of consumers by improving the allocation efficiency.

Haghigi et al. [8] in a study entitled "Designing and explaining the pattern of marketing and sales strategies in the food distribution industry" concluded that adopting a comprehensive approach to the elements that make up marketing and sales strategies and Coordination between them, taking into account the economic stagnation, the conditions of embargo and the possible situation of post-production, is one of the important matters that has

not been considered in the formulation of sales and marketing strategies of Iranian broadcasting companies. Therefore, the food distribution industry should pay attention to all the elements that form these strategies and take into account the marketing and sales tools and the management of product groups to create coordination between the marketing and sales strategies to these issues. Economic should also be given special attention.

In a study entitled "Nanotechnology, a new field in the food packaging industry", Ramaji et al. and be sent to global markets more safely. Also, with a small amount of nanoparticles, it is possible to change the properties of packaging materials without significant changes in density, transparency and processing characteristics. Therefore, this review article tries to focus on the implementation of nanotechnology as a powerful tool in the development of food packaging in order to improve food safety and quality. It is hoped that with the use of nanotechnology, the current food packaging systems will be modified and products with better and safer nutritional quality will be offered to the world markets.

Haghigi et al. [10] conducted a research titled "Modelling of factors influencing the ability to innovate in the food industry". During this research, while deeply and critically studying the scientific foundations of this issue, it was shown that innovation capability is dependent on operational capability, human capability and structural capability. This research, while confirming the direct relationship between innovation capability and these three capabilities, has extracted the components affecting each of these capabilities. The capacity to find environmental opportunities, the capacity to create ideas, the capacity of individual knowledge, the capacity of organizational knowledge, managerial capacity, cultural capacity, communication capacity, technological capacity and support capacity are the components extracted in this research. The final model of the innovation capability in the organization shows that the innovation capability in the organization has a direct and meaningful dependence on three dimensions and nine components and 22 indicators.

Mohseni Zenozi et al. [11] in a research entitled "Investigation of the effect of geographical concentration of industries and the distribution of education levels of employees on labor productivity, by sub-sectors of the food and beverage industry" came to the conclusion that in order to improve productivity Labor force in the sub-sectors of the food and beverage industry should be reduced educational dispersion among the workforce by increasing the employment of highly educated workforce, increasing geographic concentration, improving the incentive system of the workforce by determining appropriate wages, improving the management of It should be done through the reduction of entrepreneurship and state management of industrial enterprises.

Jalvati et al. [12] in a treatise entitled "Identification and prioritization of approaches and policies for the development of industries related to the agricultural sector with an emphasis on agricultural settlements and transformation industries" concluded that in today's world, food security in Every country is considered as one of the strategic and important goals of that country.

In a research entitled "Ranking of Factors Affecting Industrial Development: A Case Study of Lorestan Province", Derakhshani and Lajahfar [13] concluded that the factors of social capital and institutional quality, which are political and political factors, cultural factors and social and managerial factors and manpower have been taken into account with the calculated weights of 0.31, 0.14, 0.11 respectively, the first priority, the third priority, and the fourth priority were among the obstacles to industrial development, it is necessary to mention that Financial and technical factors were the second and sixth priorities with importance coefficients of 0.21 and 0.08 respectively, as well as infrastructural barriers and limiting factors in access to resources and raw materials with importance coefficients of 0.1 and 0.05 respectively. They are in the fifth and seventh priorities.

Sepahvand et al. [14] in a research project entitled "Investigating the causes of industrial closures in Lorestan province using the fuzzy Delphi approach" concluded that the lack of human capital, the lack of a scientific and expert justification plan, the artificially low exchange rate, the lack of Competitive advantage compared to foreign competitors, obsolete and old technologies, expensive products, high cost of financing the company (loans), lack of attention to marketing research and customer needs, inappropriate business environment, anti-capitalist tendencies. In the environment of business and government officials, the small profit of production compared to other options such as mediation and depositing in the bank, the mandated interventions of the government punishment organization, are among the reasons for the failure of industries in Lorestan province. be

Sabt and Mokhtariani [15] in a research entitled "Evaluation and analysis of Iran's manufacturing industry and providing solutions to improve it" first identified the manufacturing cluster of Iran using the cluster approach and qualitative Delphi method and then using the diamond method. Porter, the performance and competitiveness of Iran's manufacturing industry is evaluated, and at the end, using the opinions of experts and the experiences of other countries, solutions are presented to improve the situation of this industry in Iran. The results of this study indicated the unfavorable state of competitiveness in most of the factors related to this industry, which clearly explains the reason for the

weak presence of the country in this industry in the international field. At the end, four strategic solutions were presented in order to increase competitiveness in this industry: 1-Implementation of the strategy of industrial clusters in the country's construction industry 2-Creation of an organization for continuous monitoring of the construction industry 3-Improving the educational status of human resources 4- Drawing the medium-term and long-term perspective of the country's construction industry.

4- Data analysis methods

In this part, it is necessary to present the method of data analysis according to the research approach, which is a mixed type of research, separately into qualitative and quantitative parts. The process of statistical data analysis in the current research is done in two stages. In this way, in the first stage and in the qualitative part, using the content analysis method and using the Atlas.ti software, and with the open coding approach, the interviews conducted with experts were analyzed and the strategic issues of the food and beverage industry were identified. . In the second stage, the fuzzy Delphi method was used to reach a consensus regarding the identified strategic issues.

4-1- Fuzzy Delphi approach

Fuzzy Delphi method, which is an extension of classic Delphi in management science, was first proposed by Kaufman and Gupta [16]. The Delphi technique is one of the best methods for converging the opinions of experts, by means of which it is possible to extract the opinions of a group of experts with an organized and multi-stage method, using a questionnaire. By means of the feedback of collected opinions and repeating this process, a consensus opinion was reached. In fact, the use of this method for decision-making and consensus regarding goals and parameters that are not clearly defined, has valuable results. The important feature of this method is to provide a flexible framework that covers many obstacles related to inaccuracy and clarity. In fact, Delphi is a systematic method to extract experts' opinions about a topic or a question [17]. Fuzzy Delphi method is a strong process based on group structure and when complete or reliable knowledge is not available, it is used with the aim of reaching group consensus among experts. In this method, the opinions of experts are expressed in the form of definite numbers, while these people have used mental skills to express their opinions, which indicates the possibility of uncertainty governing these conditions. The possibility of uncertainty is compatible with fuzzy sets, therefore it is better that the data is obtained from experts in natural language and analyzed by fuzzy sets [18].

As a result, it was proposed to merge the traditional Delphi approach with the fuzzy theory. In this method, membership functions are used to show the opinions of experts. In fact, fuzzy Delphi is a method for structuring a group communication process in such a way that this process allows group members to challenge the problem. In order to implement this structured communication, feedback about individuals, assessment of group judgment, opportunity to modify views and a level of anonymity are needed [19]. In this way, the main goal of the fuzzy Delphi method is to achieve the most reliable group agreement of experts on a specific issue, which is created by questionnaires and asking for opinions from these people repeatedly and according to feedback [20]. The implementation steps of this approach are shown in Figure 4.

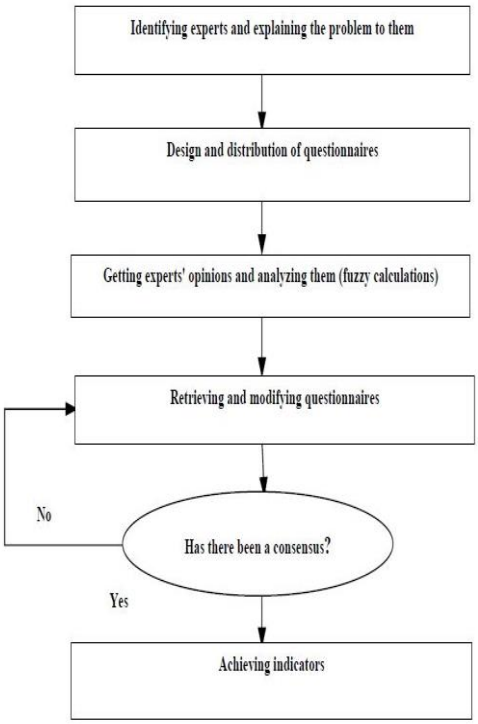

Figure 4: Algorithm for implementing the fuzzy Delphi approach [21]

The important advantage of the fuzzy Delphi method compared to the traditional Delphi method is that in this method, one step can be used to summarize and screen the variables in the indicators screen. Therefore, the Delphi steps are as follows:

- Identifying the appropriate spectrum for the fuzzification of verbal expressions
- Fuzzy summation of fuzzified values
- De-fuzzification of values
- Selection of threshold intensity and screening criteria

In the implementation of the fuzzy Delphi method for screening, first, in order to make the verbal expressions of the respondents fuzzy, a suitable fuzzy spectrum should be developed. Fuzzy spectrum development methods can be used for this purpose or common fuzzy spectrums can be used.

For example, the triangular fuzzy spectrum for a five-point Likert scale to express the importance of indicators is in the form of Table No. 1.

Table 1: Triangular fuzzy numbers equivalent to a 5 degree Likert spectrum

very much	Much	medium	little	very little
(0, 0, 0.25)	(0, 0.25, 0.5)	(0.25, 0.5, 0.75)	(0.5, 0.75, 1)	(0.75, 1, 1)

Due to the fact that in the fuzzy Delphi method, the different characteristics of people affect their subjective interpretations of qualitative variables, therefore defining the scope of qualitative variables makes experts with the same mindset to ask questions. Answer them. According to Figure 5, these variables are defined as triangular fuzzy numbers.

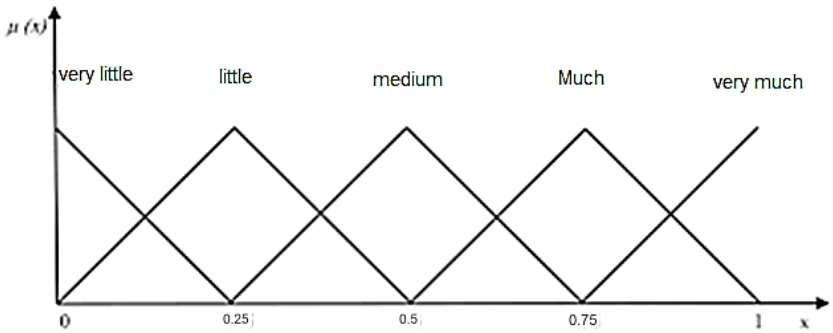

Figure 5: Triangular fuzzy numbers equivalent to a 5 degree Likert spectrum

After choosing or developing a suitable fuzzy spectrum, opinions of experts are collected and recorded in fuzzy form. In the second step, experts' opinions should be collected. Various methods have been proposed for the fuzzy aggregation of experts' opinions. If the point of view of each expert is displayed as a triangular fuzzy number (β, m, α), the fuzzy average of n triangular fuzzy numbers will be calculated as follows:

$$F_{AVE} = \frac{\sum \beta}{n} \frac{\sum m}{n} \frac{\sum \alpha}{n}$$

Various other methods are also used to aggregate the opinions of experts instead of using the fuzzy average. In fact, these aggregation methods are experimental methods presented by various researchers [22].

4-2- Data analysis process through fuzzy Delphi approach

The strategic issues identified in the food and beverage industry, which have been extracted through interviews and the examination of theoretical foundations, are given to the experts of that industry in the form of a questionnaire, and according to the linguistic variables defined and the proposed option, the results obtained from the review The responses given in the questionnaire are analyzed to obtain the fuzzy average of the components.

The following relations are used to calculate the fuzzy average.

$$A_i = \left(a_1^{(t)}, a_2^{(t)} a_3^{(t)}\right), i = 1,2,3, \dots, n$$

$$A_{ave} = (m_1, m_2, m_3) = \left(\frac{1}{n}\sum_{i=1}^{n} a_1^{(i)}, \frac{1}{n}\sum_{i=1}^{n} a_2^{(i)}, \frac{1}{n}\sum_{i=1}^{n} a_3^{(i)}\right)$$

In this regard A_i represents the point of view of the i-th expert and A_{ave} represents the average point of view of the experts.

After calculating the triangular fuzzy average for problems from Minkowski's formula, the determined fuzzy numbers are calculated for each solution.

Minkowski's Formula: $(x = m + \frac{\beta - \alpha}{4})$

Due to the fact that in the fuzzy Delphi approach, the questionnaire should be distributed to the experts at least twice, after analyzing the first round questionnaire, the questionnaire is again distributed to the experts for the second time and analyzed based on the above relationships. After calculating the fuzzy average of the components in the second stage, if the difference of the fuzzy average for the two stages is less than 0.1, it means that the experts reached a consensus about the components. Also, the fuzzy average of the second stage is used for prioritizing management issues, so that any component whose fuzzy average is higher has a higher priority؟

In this regard, in order to count and identify the strategic issues of the food and beverage industry, the experts of the research subject, whose descriptive statistics are presented in Tables No. 2 and 3, have been referred to for interviews and in the

next step to complete the questionnaire.

Table 2: The frequency of the respondents' relationship with the food and beverage industry

	number (person)
Active in the desired industry	18
Academic experts	7
Officials of relevant institutions	10
Total	35

Table 3: Frequency of education level of the respondents in the food and beverage industry

Level of Education	number (person)
Masters	**12**
Masters	**15**
P.H.D	**8**
Total	**35**

After conducting a semi-structured interview with experts and coding the results of the interview, 15 strategic issues were identified according to Table No. 4.

Table 4: Strategic issues identified in the food and beverage industry through interviews and theoretical literature

Lack of market
Low quality level and international standards of products
Improper distribution of the establishment of conversion and complementary industries without considering the potential of the agricultural sector
Lack or logical imbalance in the chain of required and complementary investments
High inflation rate
Unstable export and import and tariff policies
Problems caused by economic sanctions
Weakness of technology and the existence of machines with old technology
Low productivity of manpower
The weakness of the banking system in providing facilities
Weakness of the distribution system
Multiplicity of decision-making centers
Fluctuations in raw material prices
The unfavorable state of the general business environment in the country and the inappropriate conditions of competitiveness
There is a huge gap between the statistics of licenses issued and the construction and operation of production units of conversion industries

After identifying the strategic issues of the food and beverage industry, a fuzzy Delphi questionnaire was prepared to reach a theoretical consensus. Based on the rules of fuzzy Delphi approach, questionnaires were distributed in two stages, Tables No. 5 and 6 show the results of the first stage distribution of questionnaires and Tables No. 7 and 8 show the results of the second stage of questionnaire distribution.

Table 5: The results of counting the responses of the first stage of the survey

Variables	Very much	much	medium	little	very little
Low productivity of manpower	19	10	4	2	0
The weakness of the banking system in providing facilities	21	10	4	0	0
Weakness of the distribution system	22	11	2	0	0
Multiplicity of decision-making centers	20	8	4	3	0

Fluctuations in raw material prices	20	4	10	1	0
The unfavorable state of the general business environment in the country and the inappropriate conditions of competitiveness	19	9	4	2	1
There is a huge gap between the statistics of licenses issued and the construction and operation of production units of conversion industries	19	10	3	2	1
Weakness of technology and the existence of machines with old technology	13	13	4	2	3
Lack of market	10	10	12	2	1
Low quality level and international standards of products	14	5	10	3	3
Improper distribution of the establishment of conversion and complementary industries without considering the potential of the agricultural sector	22	7	4	2	0
Lack or logical imbalance in the chain of required and complementary investments	20	8	4	2	1
High inflation rate	20	10	5	0	0
Unstable export and import and tariff policies	21	8	3	2	1
Problems caused by economic sanctions	20	8	2	3	2

Table 6: The average opinions of experts from the first phase survey of the food and beverage industry

Variables	De-fuzzified average			De-fuzzification
	α	m	β	
Low productivity of manpower	0.579	0/829	0/943	0/607
The weakness of the banking system in providing facilities	0.621	0.871	0.971	0.646
Weakness of the distribution system	0.643	0.893	0.986	0.666
Multiplicity of decision-making centers	0.571	0.821	0.929	0.598
Fluctuations in raw material prices	0.557	0.807	0.914	0.584
The unfavorable state of the general business environment in the country and the inappropriate conditions of competitiveness	0.564	0.807	0.921	0.593
There is a huge gap between the statistics of licenses issued and the construction and operation of production units of conversion industries	0.571	0.814	0.929	0.600
Weakness of technology and the existence of machines with old technology	0.493	0.721	0.879	0.532
Lack of market	0.443	0.686	0.864	0.488
Low quality level and international standards of products	0.443	0.671	0.821	0.480
Improper distribution of the establishment of conversion and complementary industries without considering the potential of the agricultural sector	0.600	0.850	0.943	0.623
Lack or logical imbalance in the chain of required and complementary investments	0.571	0.814	0.921	0.598
High inflation rate	0.607	0.857	0.964	0.634
Unstable export and import and tariff policies	0.586	0.829	0.929	0.611
Problems caused by economic sanctions	0.557	0.793	0.900	0.584

Table 7: The results of counting the responses of the second stage of the survey

Variables	Very much	much	medium	little	very little
Low productivity of manpower	19	11	4	1	0
The weakness of the banking system in providing facilities	21	11	3	0	0
Weakness of the distribution system	22	11	2	0	0
Multiplicity of decision-making centers	20	8	5	2	0
Fluctuations in raw material prices	20	4	11	0	0
The unfavorable state of the general business environment in the country and the inappropriate conditions of competitiveness	19	9	5	2	0
There is a huge gap between the statistics of licenses issued and the construction and operation of production units of conversion industries	19	10	4	2	0
Weakness of technology and the existence of machines with old technology	13	13	4	4	1
Lack of market	10	10	12	2	1
Low quality level and international standards of products	14	5	11	3	2
Improper distribution of the establishment of conversion and complementary industries without considering the potential of the agricultural sector	22	7	5	1	0
Lack or logical imbalance in the chain of required and complementary investments	20	8	4	3	0

High inflation rate	20	10	5	0	0
Unstable export and import and tariff policies	21	8	3	3	0
Problems caused by economic sanctions	20	8	3	3	1

Table 8: The average opinions of experts from the second stage of the food and beverage industry survey

Variables	De-fuzzified average			De-fuzzification
	α	m	β	
Low productivity of manpower	0.593	0.843	0.957	0.621
The weakness of the banking system in providing facilities	0.629	0.879	0.979	0.654
Weakness of the distribution system	0.643	0.893	0.986	0.666
Multiplicity of decision-making centers	0.579	0.829	0.936	0.605
Fluctuations in raw material prices	0.564	0.814	0.921	0.591
The unfavorable state of the general business environment in the country and the inappropriate conditions of competitiveness	0.571	0.821	0.936	0.600
There is a huge gap between the statistics of licenses issued and the construction and operation of production units of conversion industries	0.579	0.829	0.943	0.607
Weakness of technology and the existence of machines with old technology	0.493	0.736	0.893	0.532
Lack of market	0.443	0.686	0.864	0.488
Low quality level and international standards of products	0.450	0.686	0.836	0.488
Improper distribution of the establishment of conversion and complementary industries without considering the potential of the agricultural sector	0.607	0.857	0.950	0.630
Lack or logical imbalance in the chain of required and complementary investments	0.571	0.821	0.929	0.598
High inflation rate	0.607	0.857	0.964	0.634
Unstable export and import and tariff policies	0.586	0.836	0.936	0.611
Problems caused by economic sanctions	0.564	0.807	0.914	0.591

According to the views presented in the first stage and comparing it with the results of the second stage, if the difference between the de-fuzzified average in the two stages is less than (0.1), then the survey process is stopped. Table 9 shows the difference between the results of the first and second stages.

Table 9: The difference between the de-fuzzified average of the first and second stages of the variables of the food and beverage industry

Variables	The de-fuzzified average of the second stage	The de-fuzzified average of the first stage	The difference between the de-fuzzified average of the first and second stages
Low productivity of manpower	0.621	0.607	0.014
The weakness of the banking system in providing facilities	0.654	0.646	0.007
Weakness of the distribution system	0.666	0.666	0.000
Multiplicity of decision-making centers	0.605	0.598	0.007
Fluctuations in raw material prices	0.591	0.584	0.007
The unfavorable state of the general business environment in the country and the inappropriate conditions of competitiveness	0.600	0.593	0.007
There is a huge gap between the statistics of licenses issued and the construction and operation of production units of conversion industries	0.607	0.600	0.007
Weakness of technology and the existence of machines with old technology	0.532	0.532	0.000
Lack of market	0.488	0.488	0.000
Low quality level and international standards of products	0.488	0.480	0.007
Improper distribution of the establishment of conversion and complementary industries without considering the potential of the agricultural sector	0.630	0.623	0.007
Lack or logical imbalance in the chain of required and complementary investments	0.598	0.598	0.000
High inflation rate	0.634	0.634	0.000
Unstable export and import and tariff policies	0.611	0.611	0.000
Problems caused by economic sanctions	0.591	0.584	0.007

4-3- The amount of difference in opinion of experts in the first and second stage survey:
The de-fuzzified average of the second stage (final stage) has been used to prioritize the strategic issues of the investigated industry. Any issue whose de-fuzzified average is higher is given a higher priority, which is based on the strategic issues of the food and beverage industry in Table No. 10.

Table 10: Prioritization of strategic issues of the food and beverage industry

Prioritization	Strategic issues
First	Weakness of the distribution system
Second	The weakness of the banking system in providing facilities
Third	High inflation rate
Fourth	Improper distribution of the establishment of conversion and complementary industries without considering the potential of the agricultural sector
the fifth	Low productivity of manpower
the sixth	Unstable export and import and tariff policies
the seventh	There is a huge gap between the statistics of licenses issued and the construction and operation of production units of conversion industries
Eighth	Multiplicity of decision-making centers
ninth	The unfavorable state of the general business environment in the country and the inappropriate conditions of competitiveness
the tenth	Lack or logical imbalance in the chain of required and complementary investments
Eleventh	Fluctuations in raw material prices
twelfth	Problems caused by economic sanctions
the thirteenth	Weakness of technology and the existence of machines with old technology
the fourteenth	Lack of market
fifteenth	Low quality level and international standards of products

5- Conclusion and suggestions

One of the indicators of development in any country is people's access to all kinds of food, calories and protein, because the role of providing food and beverages in the development process of any country or society is obvious and no country can plan Follow development plans without providing healthy and accessible food and drink for different sections of the society. Therefore, the role of the food and beverage industry in ensuring welfare and promoting development indicators is unique and fundamental. Therefore, in this research, in order to improve the food and beverage industry, it seeks to identify and prioritize the strategic issues of this industry in Iran. In the first stage, in the qualitative part, using the content analysis method and the open coding approach, the interviews conducted with the experts were analyzed and the strategic issues of the food and beverage industry were identified. In the second stage, the fuzzy Delphi method was used to reach a consensus regarding the identified strategic issues. After the investigations and evaluations, 15 strategic problems were identified in the country's food and beverage industry, the most important of which are: the weakness of the distribution system, the weakness of the banking system in providing facilities, the high rate of inflation, the inappropriate distribution of the establishment of processing industries and In addition, regardless of the potentials of the agricultural sector, they are among the most important strategic issues of this industry.

One of the most important weaknesses of the distribution system is the lack of a clear strategy for the distribution system of goods and services because the country's distribution system is neither completely traditional nor completely systematic and advanced. In order to improve the distribution system, the following suggestions are presented to the relevant officials:

- Solutions related to organizing the domestic supply network with an emphasis on strengthening the position of retail suppliers in the country
- Development of micro and small production centers
- Organizing the product distribution network including systemizing both the wholesale and retail sectors by increasing the share of the organized sector;
- Organizing the supply and distribution management system, including the revision of the rules governing the pricing system
- Also, revision of the pattern of division of work of departmental bodies in the matter of supervision and inspection with the aim of specializing supervision affairs in the custodian bodies;
- Implementation of the document on the transformation of the distribution system in the country in order to improve the distribution system of the country
- Development of logistics support institutions in the country (regarding previous and backward links) in order to improve the distribution system

Due to the high cost of production in the country, especially the cost of high-tech equipment required by the industries, as well as the age of the food industry, the artisans of this field will not be able to update and upgrade their production capacity by relying on domestic capital. In this regard, the role

of banks and financial institutions in providing facilities and delaying the defaulted facilities of these industries seems very necessary. In this regard, it is suggested that appropriate policy should be made in the Money and Credit Council regarding the payment of facilities to this industry. . Also, in order to solve the challenges and other issues of this industry, it is possible to create management mechanisms by using training and creating motivation for workers to improve the productivity of human resources, the implementation of the document on improving productivity in industries in this industry, the Ministry of Sammat proposed to avoid establishing unstable export and import and tariff policies, to monitor and monitor the licenses issued regarding the construction and operation of production units of transformation industries. It should be noted that this article is derived from a research project titled identification of strategic issues and potential and actual capacities in Iran's industry with project number 3123/1/4000634/1 sponsored by the National Defense University.

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چکیده

یکی از شاخص‌های مهم توسعه و همچنین شرط اساسی جهت ارتقای سطح رفاه در هر جامعه دسترسی مردم به انواع مواد غذایی و آب سالم می‌باشد تا آنجایی که هیچ کشوری نمی‌تواند برنامه‌های توسعه را بدون فراهم ساختن مواد غذایی و آشامیدنی سالم و در دسترس برای اقشار مختلف جامعه دنبال نماید. لذا این پژوهش به دنبال شناسایی مسائل راهبردی صنعت مواد غذایی و آشامیدنی و اولویت‌بندی آن‌ها است. این تحقیق از لحاظ هدف کاربردی و از لحاظ جمع‌آوری اطلاعات به‌صورت توصیفی- پیمایشی و از نظر روش تحقیق به‌صورت تحقیق آمیخته ترکیبی می‌باشد. برای شناسایی مسائل راهبردی در صنعت ایران از بررسی متون و گزارش‌های معتبر و مصاحبه عمیق با خبرگان استفاده می‌شود. بعد از جمع‌آوری اطلاعات با استفاده از روش کدگذاری باز داده‌های گردآوری‌شده تحلیل و مسائل راهبردی احصا و با استفاده از رهیافت دلفی فازی مسائل راهبردی اولویت بندی شده‌اند. نتایج تحقیق حاکی از آن است که مهم‌ترین مسائل راهبردی صنعت عبارت از ضعف نظام توزیع، ضعف نظام بانکی در ارائه تسهیلات، نرخ بالای تورم، پراکنش نامناسب استقرار صنایع تبدیلی و تکمیلی بدون توجه به پتانسیل‌های بخش کشاورزی، بهره‌وری پایین نیروی انسانی است.