

## A model of identifying and prioritizing factors affecting neuro-marketing via a soft approach

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### **ABSTRACT**

*This study aimed to identify and prioritize the most important factors affecting neuro-marketing to influence the subconscious of consumers in order to attract them to the organization. To this end, we first identified the factors affecting neuro-marketing by a meta-synthesis method, then via forming an expert group including marketing experts and managers in the food industry and through mutual effect analysis method and MICMAC software, a model to prioritize research hypotheses was developed. Finally, through structural analysis method of partial least squares and Smart PLS software, we began to test the proposed model and the determined relationships among the hypotheses, as this test showed the model was accurate and the hypotheses were confirmed by MICMAC software. The study results demonstrated that the following factors have the greatest impact on neuro-marketing and subconscious of consumers in the food industry, respectively: adapting the design to the target market, rationalizing the decision-making process of consumers by numbers and statistics, showing collective approval, stimulating consumers' five senses, clarifying the pricing process, personalizing customer relationships, and building trust.*

*Keywords: Neuro-marketing, Consumer's Subconscious, Meta-Synthesis Method, Mutual Effect Analysis, Partial Least Squares*

### **Introduction**

Neuro-marketing is a modern marketing method that can change the tendencies and relationships between consumers, marketers and sellers using neuroscience studies and neuroimaging techniques of the brain so that it can examine human decisions that are often unconscious embedded in his old brain (Hsu, 2017). According to global statistics, companies spend more than \$400 billion annually on marketing and customer attraction advertising, an important amount of which does not meet companies' expectations (Velasceano, 2014). Our food industry is no exception to this rule, with hefty sums of money being spent annually on marketing activities, but it does not bring us the necessary returns. This is because companies try to guess the main needs of customers by relying on the rational demands of customers and their desires. However, neuro-marketing removes this common practice and directly begins to read into the minds of customers, thus familiarity with neuro-marketing and its administration tricks can reduce many marketing costs. In 2014, the head of the Food Producers Cooperative estimated the value of Iran's food exports to Russia, Qatar and Iraq at more than \$6.5 billion, compared to only \$500 million in 2006, suggesting the important role of this sector in the economy. As well, the food industry is considered to be

the most expensive industries in the country, representing the significance of this industry in the country's economy (Dehghani, 2014). Nervous marketing is founded on focusing and mastering the old human brain. The old brain is in fact the instinctual and unconscious brain of humans that makes decisions automatically for man and can save man from destruction, death and fear. That is why the old brain is called the survival instinct brain. On the other hand, today, man has suffered from high-risk diseases because of failure to follow a proper lifestyle and unhealthy diet. According to statistics released by the Cancer Society, unhealthy diet and polluted air account for as much as 30-50% of cancer causes. This is while, with an increase in communication technology, scientific and medical information will be provided in the shortest possible time across the world. Hence, we as food consumers, are afraid of destruction of any kind of food in our subconscious, and it is at this time that we can use food marketing specializing in the subconscious instinct to reduce the fear among food consumers. We redesign our data, advertising, and customer purchasing decisions in a way that our food products do not conflict with consumers' subconscious. Now, we are seeking to identify the factors affecting this process (Neuro-marketing) so that neuro-marketing considers the positive effects over the organization's marketing system with the maximum efficiency and in a desired way. The main question in this research is: What factors can have the highest effects on this type of marketing process in the Food Industry?

### **Theoretical research foundations**

In 2017, Ghorbani and Ghareh Biglou did a quantitative and qualitative field research in a research entitled "Designing a Model to Attract Customers with a Neuro-marketing Approach in State-Owned Banks" aiming to identify the most appropriate strategies for attracting customers to banks and credit institutions. Finally, the findings of this study led to the presentation of a model through 9 factors, i.e., customer service, accountability, processes, information-raising, beautification, modern banking, pricing, staff and customer relationship management, indicating that using neuro-marketing can attract 70% of customers to banks. This study stated that neuro-marketing is one of the most effective marketing procedures to attract customers to banks and it is possible to identify customers' unconscious opinions via an instrumental view of this field and adjust the organization's marketing incentives in line with the obtained data (Ghorbani & Ghareh Bigloo, 2017). In their book entitled "Neuro-marketing and its 21 Practical Tricks", Baghousian and Jozi, as the first Iranian authors involved in neuro-marketing, stated that one of the most important reasons for using neuro-marketing is to draw the attention of organizations' advertisements in an environment full of advertising messages. Arguing that markets today are saturated with advertising messages, they state one of the best and least cost-effective ways to increase the attention and effectiveness of advertising messages is to apply neuro-marketing. In this book, neuro-marketing has been introduced as a tool to identify the consumers' mind map and to assess the effectiveness of this tool was tested. At last, the 21 tricks, were stated to be the most common neuro-marketing tricks that are the key to the success of most organizations in increased sale (Baqousian & Jozi, 2013). In 2018, Lewandowska et al. did an article entitled "Neuro-marketing tools to evaluate effective communication on an environmental methodology-based pricing" aimed at appraising and comparing the effectiveness of various tags in environmental information communication consistent with the life cycle model in the EU using a qualitative method. The findings illustrated that one of the most desirable methodological tools for qualitative research is neuro-marketing. In this article, neuro-marketing was preferred over to the questionnaire and the focus group with its advantages over other data collection tools being stated (Lewandowska, Borusiak, & Pierks, 2018). In a study entitled "Welcome to the Jungle: A Nervous Marketing Research Literature for Beginners," Lee, Chamberlain, & Brands, while reviewing more than 131 studies in the field of neuro-marketing, began to identify difficult factors for new researchers to enter the neuroscience science. They concluded that two factors are the most important factors which make novel researchers enter this field: The first difficult factor is because of the existing miscellaneous research literature and lack of marking on the entry and development in the field of neuro-marketing. The second difficult factor is because of the lack of cognitive procedures and the publication of basic articles in this field in low level journals. (Lee, Chamberlain, & Brands, 2018). D'Ursan and Goker performed a study entitled "A Two-Rule based Approach to Evaluating Neuro-marketing Technologies, with

Consideration of Limitations and Problems of Neuro-marketing," aiming at ranking neuro-marketing techniques and technologies. The findings illustrated that the fMRI functional magnetic method is the most effective and widely used method of neural mind reading method as temporal and spatial studies prevail. In this study, fifteen mind reading tools were introduced and analyzed. Finally, it was indicated that a large number of these tools could not be administered in the real market (Dursan & Goker, 2018).

In an article entitled "Investigating Individual Reasons and Cerebral Activities in Appraising the Experiences of Tasting Alcoholic Beverages with a Neuro-marketing Approach" aimed at examining physiological and neural processes and identifying the effects of experiences on taste perception, Alvino et al. did a qualitative and quantitative research. The study findings specified two issues:

A) Individual preferences and experience moderate brain beta activity by tasting.

B) Greater preferences for a product are associated with a sharp decrease in the fluctuations related to the taste of those products. This study confirms the initial neuro-marketing research, including the Pepsi Contradiction Test and the Soap Selection Criteria Test (Alvino & Vander Lubbe, 2018).

In 2018, Stasi et al. did a study in an article entitled "Experimental Approaches to Neuro-marketing and Food Selection: A Systematic Survey" to investigate past experiences and individual feelings in food selection and to measure response to them. This study was also performed with two other main objectives:

A) Describing the hypotheses, techniques and privileges of the neuro-marketing perspective; reviewing the status of the scientific literature on using neuro-marketing in food research.

B) To identify the best ways to administer this approach in the field of food stuff with a special attention to non-aggressive procedures. The findings illustrated that inserting health content on food labels and packaging honestly are of great importance from a neuro-marketing perspective (Stasi, Songa, & Mauri, 2017). In a study entitled "The Impact of Neuro-marketing on Retailers", Grabner and Huber presented a consumer decision-making model in traditional marketing and developed a consumer mind map model from a neuro-marketing perspective while at the same time comparing the two models. The findings showed that the neuro-marketing has challenged traditional marketing and one of these issues is the consumer's understanding of the buying process; in reality, the understanding consumer behavior system based on neuro-marketing is very different from traditional marketing system. In neuro-marketing, customers make decisions based on their emotions and subconscious mind (Grabner & Huber, 2016). In 2017, Stanton did a research in a study entitled "Neuro-marketing, the Ethical Outcomes of Potential Use of it" aimed at reducing the threats and risks from using neuro-marketing in a qualitatively quantitative way. Research findings indicated that the positive dimensions of neuro-marketing have not unfortunately been noted and this is a cause for distrust. The research also suggested that neuro-marketing does not try to force consumers to buy products, but to make managers of organizations aware to effectively design the brand and product idea in line with customers' subconscious; this is while neuro-marketing does not imply a red buy switch in the brain of customers (Stanton & Sinnott Armstrong, 2016). In 2016, Charles Spence performed an advanced field research in a study entitled "Neuroscience-Inspired Design: From Basic Neuro-marketing to Advanced Business Research" aimed at applying neuroscience science and its administration manners in real markets. The findings of this study eventually led to a model to administer neuro-marketing and it was determined that a large number of neuro-marketing tools can be easily carried on to the real environment; thus by measuring the nervous mobility of sample people in the field of branding and creating product and advertising ideas, one can move forward compared to the competitors (Spence, 2016). In a research entitled "Neurophysiological Methods and Modeling the Market Reaction," Venkatraman et al. pointed out that one can easily apply marketing science to analyze key parts of the brain in response to purchasing operations to learn how to design and develop a way that involves the highest impact on consumer behavior. In this study, they investigated nineteen neuro-marketing tools and stated the advantages and disadvantages of each. In this study, fMRI tool was introduced as one of the most desirable and effective tools for neuro-marketing and consumer mind reading. One of the most applied components of this tool is to foster effective advertising and valuable branding (Venkatraman, et al., 2015).

## **Research Method**

The present research is of applied research type and qualitative and quantitative methods are used that will be administered in three stages. This research involves three general stages. In the first step, we identified the factors affecting neuro-marketing. Due to the lack of a research background, a meta-synthesis method was used to identify the factors affecting neuro-marketing. At this stage, a completely qualitative approach was used. By conducting library studies related to the subject of neuro-marketing and the qualitatively combining of the data obtained from their study, the factors affecting neuro-marketing were identified by the meta-synthesis method. The researcher focused on library studies, i.e., on identifying techniques, factors, and tricks that can play a positive role in implementing neuro-marketing while subconsciously persuading consumers to purchase more favorably. In the second stage of the research, after the hypotheses were identified, the main objective is to determine the relationships among the factors (hypotheses) specified in the first stage. At this stage, a semi-quantitative approach was used. To develop the model and determine the relationships among the known effective factors, the mutual effect analysis method with MICMAC software was utilized. In this section, a questionnaire was given out among the experts in order to complete the mutual effect matrices and to estimate the value of each process or the initial occurrence probability of each event. In the third stage of the objective research, model test is introduced. In this study, we examined the efficiency of the proposed model via a quantitative approach and distributing a questionnaire. To examine the correctness of the developed model, and to prioritize the effective marketing and neural factors in the food industry, structural equations of least squares method was applied along with Smart PLS software.

- **Data analysis of the meta-synthesis method**

To identify the factors affecting neuro-marketing, the Barros and Sandelowski's meta-synthesis method was used. Barroso and Sandelowski proposed a seven-step method for meta-synthesis: (Sandelowski & Barros, 2007).

### **Step 1: Defining the research question**

The first step for the researcher is to focus on the main research question. The main question is: What are the factors affecting neuro-marketing?

Additional parameters of this question are given in the table below.

**Table 1: Definition of research question**

<b>Parameters</b>	<b>Raising the question</b>
what? (Studied question)	What are the factors affecting neuro-marketing?
Who? (Studied community)	Several valid databases were reviewed
what time? (time limitation)	Articles and studies from 2000 to 2019
How? (Data collection method)	Secondary data analysis (Documentary analysis)

### **Step 2: Identifying and retrieving literature studies intelligently**

In this study, various databases from 2000 to 2019 were examined. In the selected databases, specific keywords were used to search for the desired articles.

### **Step 3: Determining the inclusion and exclusion criteria and search for selected texts**

After extensive search, as many as 79 articles in this field were obtained within a specified time period. The following algorithm illustrates the screening process of the materials and articles found. Also, in this study, CASP was used to select the most desirable articles, in order to increase the validity and accuracy of the results. In this section, the content found was evaluated by 10 questions using the CASP method and the most desirable articles were chosen.

It should be pointed out however that this screening and CASP process was only performed for articles. In the research search process, ten books related to neuro-marketing were found, all of which were included and used in the synthesis process.

#### Step 4: Extracting literature information

At this stage, the main objective is to extract the necessary key information from the articles.

- What are the factors affecting neuro-marketing?
- What are the factors persuading customers to buy?
- What factors affect the subconscious of consumers?
- What are the factors influencing pain reduction when shopping?
- What psychological factors have a positive impact on the customer's decision-making process?

#### Step 5: Analyzing and synthesizing qualitative findings

Table 4 illustrates the way the analysis and the meta-synthesis procedure is done via classifying identified concepts and factors.

**Table 2: Analyzing qualitative findings**

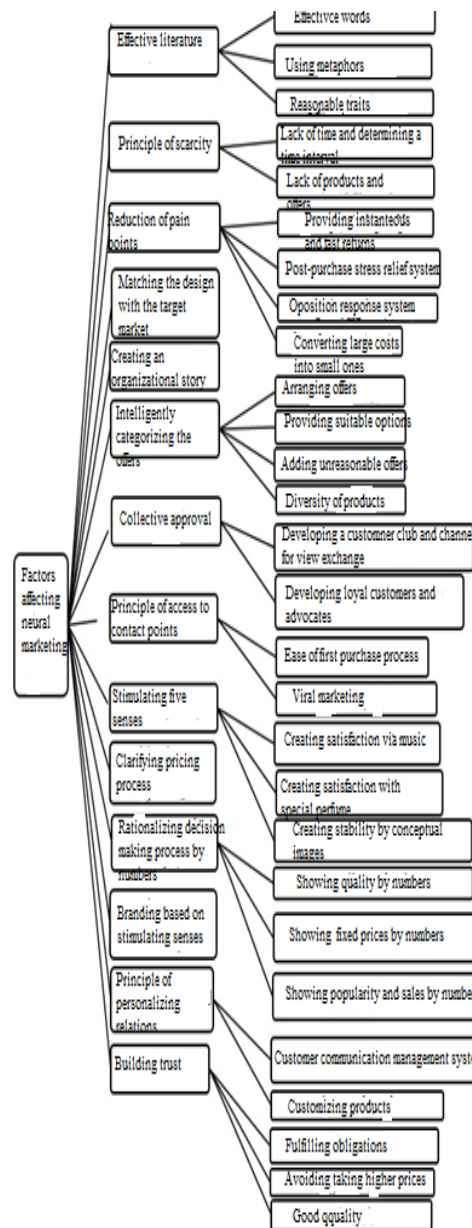
Row	Main factors (criteria)	Sub-criteria	Resources
1	Effective literature	<ul style="list-style-type: none"> <li>• Effective words</li> <li>• Use of metaphors</li> <li>• Reasonable and effective adjectives</li> </ul>	(pileliene & grigaliunaite, 2017) - (hsu, 2017) - (van praet, 2014)- (plessis, 2011) - (page, 2015)
2	The principle of scarcity	<ul style="list-style-type: none"> <li>• Lack of time and time interval</li> <li>• Lack of product and offers</li> </ul>	(zoega, 2014)
3	Intelligently categorizing offer	<ul style="list-style-type: none"> <li>• Providing instant and fast returns</li> <li>• Post-purchase stress relief system</li> <li>• Protest response system</li> <li>• Fragmentation of large costs</li> </ul>	(cerf, 2017)- (hazeldine, 2013) - (hsu, 2017) - (morin, 2011)- (spence, 2016) - (page, 2015)
4	Reducing pain points	<ul style="list-style-type: none"> <li>• Arrangement of offers and product</li> <li>• Providing appropriate options</li> <li>• Adding unreasonable offers</li> </ul>	(spence, 2016) - (zurawicki, 2011) - (plessis, 2011) - (page, 2015)
5	Intelligently categorizing offers	<ul style="list-style-type: none"> <li>• Creating a customer base and exchanging views</li> <li>• Building a loyal customer club</li> </ul>	(plessis, 2011) - (pileliene & grigaliunaite, 2017) - (Baqousian & Jozi, 2013) - (Danesh Thani, Safania, & Poursoltani, 2017)
6	Collective approval	<ul style="list-style-type: none"> <li>• Ease of first purchase process</li> <li>• Viral Marketing</li> </ul>	(van praet, 2014) - (hsu, 2017) - (spence, 2016) - (page, 2015) - (dapkevicius & melnikas, 2009) -
7	Collective approval	<ul style="list-style-type: none"> <li>• Creating a customer base and exchanging views</li> <li>• Building a loyal customer club</li> </ul>	(bridger, 2017)
8	The principle of access to contact points	<ul style="list-style-type: none"> <li>• Creating satisfaction via music</li> <li>• Creating conceptual images and clips</li> <li>• Special perfume</li> </ul>	(stasi, songa, & mauri, 2017) - (zurawicki, 2011) - (Baqousian & Jozi, 2013) - (Danesh Thani, Safania, & Poursoltani, 2017)
9	Matching the design with the target market	<ul style="list-style-type: none"> <li>• Creating satisfaction with music</li> <li>• Creating conceptual images and clips</li> <li>• Special air perfume</li> </ul>	(karmarkar, shiv, & knutson, 2015) - (dapkevicius & melnikas, 2009) - (zurawicki, 2011)
10	Stimulating the five senses	<ul style="list-style-type: none"> <li>• Displaying quality with numbers</li> <li>• Display price utility with numbers</li> </ul>	(andrew, alexandro pop, & maria lorga, 2017) - (zurawicki, 2011) - (karmarkar, shiv, & knutson, 2015) -
11	Clarifying pricing	<ul style="list-style-type: none"> <li>• Displaying quality with numbers</li> <li>• Display price utility with numbers</li> </ul>	(plessis, 2011) - (van praet, 2014)
12	Rationalizing decision making with numbers	<ul style="list-style-type: none"> <li>• Customer relationship system</li> <li>• Product customization</li> </ul>	(zurawicki, 2011) - - (page, 2015) - (stasi, songa, & mauri, 2017)- (van praet, 2014)
13	Branding by stimulating the senses	<ul style="list-style-type: none"> <li>• Creating a customer base and exchanging views</li> <li>• Building a loyal customer club</li> </ul>	(zurawicki, 2011)
14	Personalizing relations	<ul style="list-style-type: none"> <li>• Execution of obligations</li> <li>• Refraining from selling at higher prices</li> <li>• High quality</li> </ul>	(cerf, 2017) - - (morin, 2011) - (dapkevicius & melnikas, 2009) - (plessis, 2011) - (van praet, 2014)-

#### Step 6: Controlling quality

In the third stage of the meta-synthesis procedure, the quality of the input articles was evaluated using CASP appraisal process. Presently, to control the analysis results and synthesis using the pairwise

comparison method, an expert in the area of marketing and meta-synthesis was asked to review the output results and to offer opinions. The findings of comparing opinions with experts were evaluated using the Kappa index.

**Step 7: Findings**



**Figure 1: Identified effective factors**

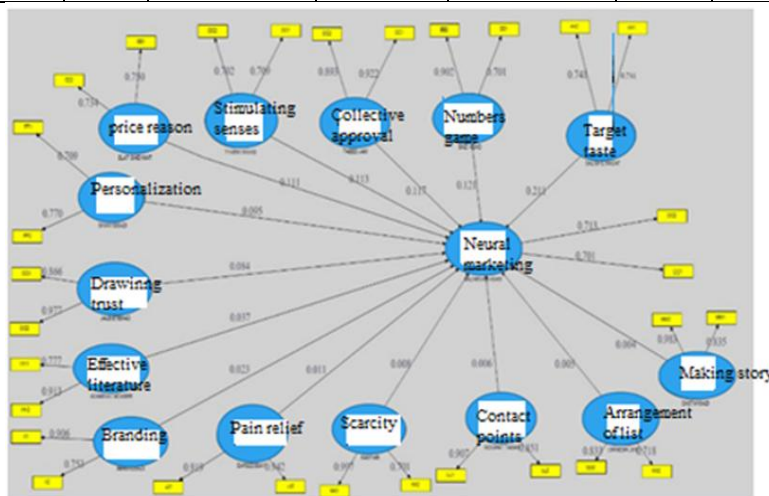
• **Data Analysis Method or Mutual Effect Analysis by MICMAC Software**

In the meta-synthesis stage, 14 factors were identified where by forming a 14 \* 14 matrix, an expert group started to fill in the matrix cells. The results indicated that there is a total of 14 x 14 =196 possible effects, and all central diameter cells of the matrix take the number zero because it shows the effect of

each factor on itself. The obtained matrix was evaluated based on statistical index with 3 data rotations of 100% optimization suggesting a high validity of the questionnaire. The table below shows the prioritization of factors based on direct impact and indirect impact.

**Table 3: Prioritization of factors based on direct and indirect impact and dependence**

Prioritization	Factors	Direct effects	Factors	Direct dependence	Factors	Indirect effects	Factors	Indirect dependence
1	Target taste	945	Pain relief	1393	Target taste	935	Pain relief	1367
2	Numbers game	895	Contact points	1094	Numbers game	920	Collective approval	1152
3	Collective approval	845	Collective approval	995	Personalization	872	Contact points	1132
4	Stimulation of the senses	845	trust	945	Collective approval	842	trust	1010
5	Price reason	845	Branding	796	trust	841	Personalization	874
6	Personalization	845	Price reason	746	Price reason	835	Price reason	710
7	Building trust	845	Personalization	696	Stimulation of the senses	776	Branding	694
8	literature	696	Target taste	597	literature	717	Target taste	589
9	Branding	696	literature	547	Pain relief	685	literature	496
10	Pain relief	646	Stimulation of the senses	497	Branding	672	Numbers game	455
11	Scarcity	597	Numbers game	497	Scarcity	572	Story	435
12	Contact points	497	Story	447	Contact points	528	Stimulation of the senses	430
13	Arrangement of the list	447	Arrangement of list	398	Arrangement of list	471	Arrangement of list	356
14	Story	348	Scarcity	348	Story	326	Scarcity	292



**Figure 2: Effect-affect Diagram of Mutual Effect Matrix**

According to the effect-affect graphs, MICMAC Software evaluated 6 factors: target taste, playing with numbers, collective approval, stimulation of the five senses, price reason and relationship personalization as influential on neuro-marketing and regarded the influence of other factors in the food industry as very little.

Now, to test this result, the partial least squares method with Smart PLS software with a sample of 50 people was used.

• **Analysis of by information PLS method and Smart PLS software**

According to the research hypotheses, the number of 14 factors affecting neuro-marketing were identified. In the partial least squares method, each of these factors is called constructs and the criteria and questions related to identifying each factor in the questionnaire are called identifier.

**Evaluation of the measuring model:** Reliability tests and validity tests were used to measure the fit of the reflective measurement model.

**Measuring model reliability test:** Reflective reliability tests include two Cronbach's alpha criteria and a factor load. Both the Cronbach's coefficient and the load factor of each question must be greater than 0.7 for optimal evaluation.

**Validity test of the measuring model:** The validity of reflective constructs is measured by two methods: convergent validity and discriminant validity.

**Convergent validity:** In the convergent validity method, the Average Variance Extracted index (AVE) is used. For convergent validity, the Average Variance Extracted index (AVE) is calculated and compared with the Composite Reliability (CR).

**Discriminant validity:** Differential or discriminant validity must be taken into account for both constructs and identifier. In the discriminant validity of constructs, the square of the AVE variance table is taken and the obtained values is substituted into the diameter of the correlative matrix of the constructs. If the squares taken in front of each construct are larger than the other correlative values of that construct with other constructs, the differential validity is evaluated positively. This process is called the Chen Method or test. The differential validity of the constructs of this study is evaluated as favorable.

To calculate the differential validity of the identifiers, the factor load method is used. In this way, the factor load of each identifier for its respective construct must be greater than the factor load of that identifier for other constructs.

**Structural model evaluation**

After measuring the validity and reliability of the measurement model, the structural model was evaluated through the relationships between latent variables. Figure 3 shows the PLS algorithm and Table 7 shows Bootstrap and T-Student statistics.

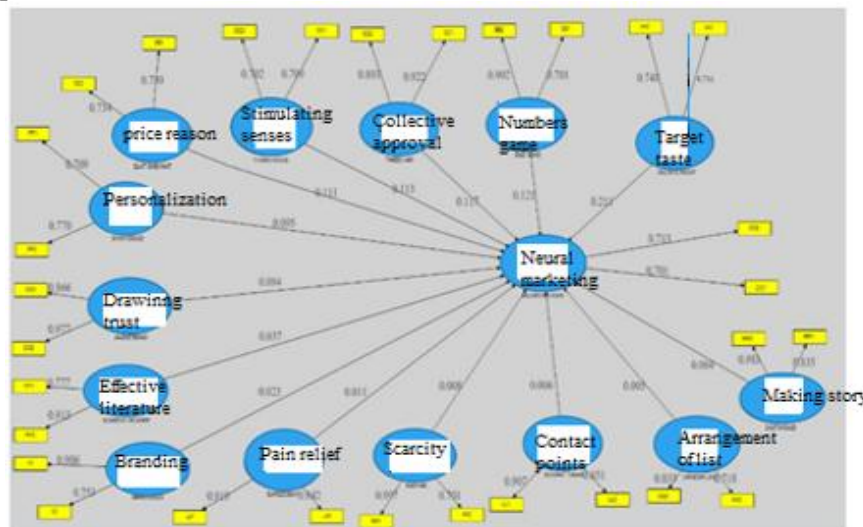


Figure 3: PLS model of algorithm and display of path coefficients

**Structural Model Fit Index:** The number opposite cv-red is the redundancy check index showing the fit and quality of the structural model, and the numbers opposite cv-com show the commonality validity check index. Positive numbers indicate the quality and appropriateness of the research model.

**Model test result**



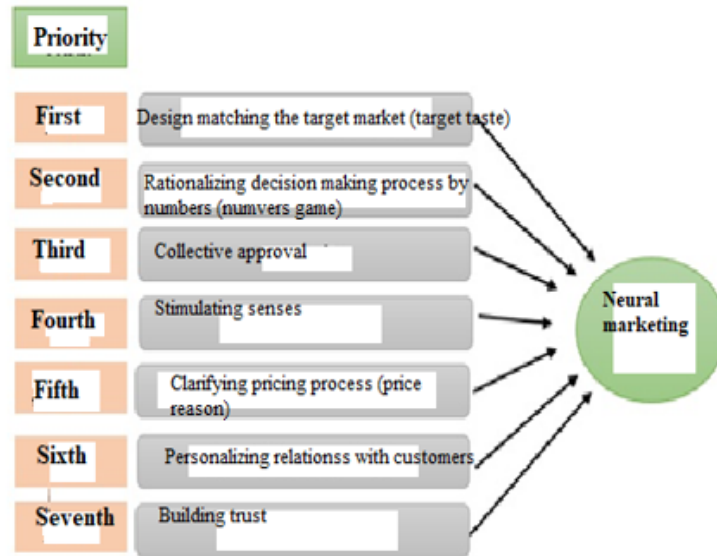
As you see in the PLS algorithm, according to the path coefficients, the 5 factors of target taste, number game, collective approval, stimulation of the senses and price reason have the greatest impact on neuro-marketing. Also in the figure and by observing the results and the T-Student test coefficients, such factors as target taste, number game, collective approval, stimulation of the senses and price reason have a significant relationship with neuro-marketing at a significant level of 0.01 and other factors have no significant relationship with neuro-marketing as they are lower than 1.95. The following table illustrates the results of hypotheses examination.

**Table 4: Results of research hypotheses based on structural analysis model**

Hypotheses	Path coefficients	T value	Results
The effect of adapting design with the target market (target taste) on neuro-marketing	0.211	3.793	Confirmed
The effect of rationalizing decision making by numbers on neuro-marketing	0.121	2.433	Confirmed
The effect of collective approval on neuro-marketing	0.117	2.588	Confirmed
The effect of stimulating senses on neuro-marketing	0.113	2.230	Confirmed
The effect of clarifying the pricing process (price reason) on neuro-marketing	0.111	2.553	Confirmed
The effect of personalizing consumer relationship on neuro-marketing	0.110	2.233	Confirmed
The effect of building trust on neuro-marketing	0.085	2.311	Confirmed
The effect of effective literature on neuro-marketing	0.023	2.212	Confirmed
The effect of sensory-based branding on neuro-marketing	0.04	0.831	Rejected
The effect of reducing pain points (pain relief) on neuro-marketing	0.011	0.441	Rejected
The effect of principle of scarcity on neuro-marketing	0.003	0.541	Rejected
The effect of making contact points accessible on neuro-marketing	0.008	0.315	Rejected
The effect of intelligently categorizing product list on neuro-marketing	0.009	0.415	Rejected
The effect of organizational story making (storytelling) on neuro-marketing	0.005	0.331	Rejected

**Research findings**

The findings of this study generally point to the fact that seven factors affect neuro-marketing and subconscious motivation of customers to buy from the organization. Figure 6 illustrates the final model of factors affecting neuro-marketing in the food industry in Isfahan province.



**Figure 4: The final research model (Factors affecting neuro-marketing)**

**The two following points are important this section:**

- All these factors were identified in the first stage of the research via a meta-synthesis method by studying 9 articles and 10 neuro-marketing books and the common point to all these factors is how to apply them through digital instruments and social networks. In all the articles and studies included in the

meta-synthesis method, they all pointed to the significance of digital marketing and social media. In sum, the most effective way to apply these factors is through virtual, digital and social networks.

- In all identified factors, the first step is to identify the mind map of consumers in the target market and to identify their lifestyle and social class. To design products according to the tastes of the target market, to clarify the pricing process, to rationalize customer decision making by numbers, to stimulate consumers' five senses and for all these identified factors, there is a need to understand and identify customers' psychological, cultural and social dimensions in the target market. From the perspective of neuro-marketing, the most appropriate procedure to scientifically understand the mind map of customers and identify their unconscious behavior is through neuro-marketing mind reading. Two very useful tools that can be mentioned in this article are FMRI and EEG.

## **Discussion**

This research attempted to access several cases. The following factors were selected as the most important objectives of this study:

- Identifying the most important factors affecting neuro-marketing in the food industry to increase market share and increase sales.
- Designing a model to reduce the macro and inefficient marketing costs in the food industry via neuro-marketing techniques.
- Testing the proposed model by the partial least squares method.
- Increasing the share of food industry in the global arena by benefiting from factors affecting a neuro-marketing.

Here are some research questions and answers:

Question 1: Identify the factors affecting neuro-marketing that drive consumers' subconscious to purchase from the organization?

Answer to the first question: In this study, using the meta-synthesis method, 14 factors affecting neuro-marketing were identified, which are:

Adapting the design to target market, rationalizing consumer decision making by numbers, collective approval, stimulating five senses, clarifying pricing process , personalizing relationship, building trust , effective literature, sensory-based branding, relieving pains, scarcity principle, making contact points accessible , Intelligently categorizing product lists, building organizational stories.

Question 2: Prioritize the factors affecting neuro-marketing in the food industry?

Answer to the second question: Using the interaction analysis method by MICMAC software, the factors affecting neuro-marketing in the food industry were prioritized.

**Table 5: Factors affecting neuro-marketing in the food industry**

<b>Priority</b>	<b>Factors affecting neural marketing in the food industry</b>
First	Design matching with target market (target taste)
Second	Rationalizing Consumer Decision Making by Numbers (Numbers Game)
Third	Collective approval
Fourth	Stimulating the five senses
Fifth	Clarifying pricing process (price reason)
Sixth	Personalizing relationship
Seventh	Building trust (gain trust)

## **Comparison with previous studies**

Research in the area of neuro-marketing often deals with the effectiveness of mind-reading instruments either with a medical approach or only with a review and descriptive study in the marketing and economic approach. Domestically and abroad, due to the novelty of this domain and that it remains

unknown, researches are generally review and definition-based ones, and for this reason, one can say that this research is included in:

- Few domestic and foreign studies in the domain of neuro-marketing that have an applied-exploratory approach and have a non-review framework.
- This research is the first and only research in the area of marketing that has widely identified the factors affecting neuro-marketing via a synthesis approach.
- This research is known as the first research compared to previous researches that presents a model in the field of neuro-marketing using a mutual effect analysis.
- In this article, to test the proposed model, the partial least squares method was used, which is in a better position compared to previous studies

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