

The effect of new Neuromarketing techniques on sales of cosmetics and health products

Abstract

The present research has investigated the effect of new neuromarketing techniques on the profitability of the cosmetic, health products market and income generation. The statistical population of this research is all the consumers of common cosmetic brand products in Iran, including My, Laboren, Cinere, Schon, and Hydroderm. The sampling method is clustered, non-random, and accessible. Considering that the statistical population in this study is unlimited, based on the sample size formula in the unlimited population, 384 people were selected as the statistical sample. The results show that if a brand can correctly understand the customer's demands and provide a range of high-quality, diverse, effective cosmetic products at a reasonable price, it will achieve better profitability among its competitors. In other words, profiting from new techniques of neuromarketing can lead to stimulating the emotions and feelings of the customer and encouraging immediate purchase. All these results led to the formation of the research conceptual model (seven-factor technique).

Keywords: Neuromarketing, profitability, cosmetic health products, income generation, marketing

Dr. Seyed Mohammad Tafarshi*

Doctor of Management, Assistant Professor, Member of the Faculty of Islamic Azad University, Torbat Heydarieh, Tafreshiazad1@yahoo.com second writer

Ali Rezaei

Ph.D. student in marketing management Islamic Azad University, Torbat Heydarieh branch

1. Introduction

The successful entry of a new brand into the market and bringing it into the sales cycle requires several actions, including market research, marketing methods and research. Nowadays, the importance of marketing is so much that the success in selling a product owes more to product marketing than to the managers of related companies. In the way of marketing to attract consumers to a product or service in the target market, companies use creative methods to face competitors and be present in the product market. Therefore, it can be said that research and marketing methods are at the heart of every commercial and non-commercial organization [1].

Due to marketers' keen interest in consumer purchasing decisions and understanding their inner intentions, the theories and models used in consumer research have changed dramatically in the past few years. Researchers and specialists have been looking for new and combined methods of consumer purchasing decisions to help increase sales and the effectiveness of advertising messages. For this reason, the use of neuroscience methods in marketing has become widespread, and in recent years we have seen significant growth in the scientific ability of neuroscientists. These experts directly study the cortical activities of the brain at different times, places, and frequencies [2].

On the other hand, the integration of psychological and physiological sciences has led to the application of techniques for amazing progress in understanding the activities of the brain and knowing its different parts. Today, many social science researchers use neuroimaging as a standard tool or approach for research. Especially, the application of this concept reached its peak when economics began to use

neuroimaging techniques in its research and a new field called the economics of neuroscience was born [3].

One of the developments made in this direction is the combination of different departments of marketing and business groups with neuroscience and the formation of interdisciplinary specializations [4]. These interdisciplinary specializations can be considered a combination of neuroanatomical sciences, neurology, neuroscience psychology, neuroendocrinology, and neuroscience economics [5].

Also, the use of neuromarketing methods goes beyond traditional methods such as focus groups, questionnaires, and interviews. Because the purpose of this method is to reach the minds of customers. Today, organizations have taken a step further and want to discover the motives and intentions that lead to human behavior. Neuromarketing is an emerging phenomenon whose findings open a new window for organizations and marketing professionals.

2- Literature review

2-1- Neuromarketing

Neuromarketing is the product of two marketing sciences and neuroscience. This amazing and emerging knowledge provides the mind map of consumers to industry owners and marketers. The concept of neuromarketing was proposed by psychologists at Harvard University in 1990, and in 2002, this field was introduced to the world [6]. Neuromarketing is based on the study of consumer behavior from the perspective of the human brain [7]. Klineckova [8] points out that neuromarketing helps to better understand the functioning of the brain, thereby improving marketing and sales operations while increasing business efficiency in the organization. Baños-González et al.

[9] show that neuromarketing is the boundary between neuroscience, psychology, and marketing, which focuses on the emotional and cognitive reactions of consumers to marketing stimuli, and its purpose is to better convey commercial messages to others and increasing the probability of consumer purchase, which causes the reduction of marketing and advertising budgets.

Al-Abbas et al. [10] stated in their study that in neuromarketing, consumer preferences and behavior of the product and brand name depend more on the habits, feelings, opinions of others, and personal experiences of the product and its choice is not only based on a logical analysis.

The results of Grajdieru's research [11] show that our decisions are more emotional and based on the feelings and opinions of others than having a rational basis and based on reasoning, and they occur in the subconscious. At the same time, rational decisions will never be implemented without involving emotional aspects. This is precisely the strength of neuromarketing, which can penetrate our subconscious mind.

The studies of Hilderbrand [12] have shown that neuroscience and neuromarketing have a significant impact on the final decision of the consumer in choosing a brand. Also, the results show that neuromarketing is effective in remembering brands and brand slogans. Recent research suggests that different parts of the brain are involved in purchasing decisions.

The results of Michael et al. [13] in the field of neuromarketing show that 65% of the information that reaches the brain is through vision. Stimulating and influential images are very important in persuading the consumer's mind. Anything including sight, smell, taste, and sound can influence consumer behavior. This shows that marketing and advertising affect the consumer, but most of this effect is done unconsciously.

The results of the research by Krajnovic et al. [14] entitled "Neuromarketing and consumer free will" showed that most of the involuntary and basic consumer decisions are made by the old brain and the focus of neuromarketing for success in sales is on the old brain and emotions which affect the consumer's purchasing decision.

Venkatraman et al. [15] in a study entitled "Prediction of advertising success in consumer behavior through neuromarketing methods and beyond traditional marketing measures" showed how through neuromarketing, we can understand the brain systems involved in purchasing. Analyze and tell companies and institutions how they can design their advertising to have the greatest impact on their consumers' purchases. One important point that is overlooked in traditional marketing is that purchasing decisions are often made with the old brain. The old brain is motivated by emotions. The neuromarketing approach is exactly that, focusing on the old brain for sales success. The findings show that emotions have an impact on purchase decisions, but the results indicate that

the influence of the emotional part and the old brain is far beyond what was imagined.

Singh [16] shows that neuromarketing is an interdisciplinary science that is rapidly emerging in consumer behavior research around the world, which replaces the traditional marketing model intending to improve the understanding of the process related to purchasing behavior. In the same context, Venkatraman et al. [15] state that in traditional marketing models, the individual customer is completely rational and his purchases are the result of his fully voluntary and conscious decisions. In this model, the consumer knows his preferences and tastes exactly, and this makes him choose the best option among the available options.

2-2- Neuromarketing techniques

Different techniques and tools in neuromarketing are used by new technologies in the field of neuroscience to observe the brain areas involved in seeing, hearing, or smelling the product, these tools include relationships between body and mind (reaction times/levels) diagnosis), fMRI (functional Magnetic Resonance Imaging), MEG (Magnetoencephalography), and more traditional methods such as EEG (Electroencephalography) to see what area of the brain is activated when the test sample sees, hears or smells the product. The activity of these regions, such as the nucleus Accumbens, Insula, and mesial prefrontal cortex, provides researchers with a general insight into how consumers respond to certain stimuli [17].

Based on the studies conducted, in the fMRI technique with the benefit of the imaging scanner that the test subjects lie inside during the test, the changes that occur in the blood oxygen have been observed and the intensity of the blood flow in the areas are measured differently [18]. This method shows the activity of the brain in a three-dimensional and anatomical way with high quality (high spatial resolution). Nonetheless, it has a low time resolution and is quite expensive. Another limitation of this method is that there is a 5-second delay between the stimulus, which is the same commercial products, and the observation of brain activity changes through imaging. Therefore, it becomes very difficult to evaluate multi-second television advertisements that have a fast rhythm with this method [19].

A review of sources related to the EEG technique shows that this method observes and records the changes in the electrical activity of the brain by using electrodes that are installed in the head area of the subject [20]. This method has a high temporal resolution (on the order of milliseconds) and a small spatial resolution (on the order of one centimeter per electrode) and is less expensive than the FMRI method [21].

A review of the articles related to the MEG technique shows that this method measures and magnetically observes the

changes in brain waves by using very sensitive sensors that have been tested on a hat on the head of people. [22]. This method has a higher temporal resolution and a lower spatial resolution compared to the EEG technique, and in terms of cost, it is more expensive than the EEG method [23].

The purpose of this research is to provide a seven-factor model for monitoring the cosmetic products market by benefiting from the technique of penetrating deep into the customer's mind, which is the main neuromarketing technique, and measure the effect of this model on the number of sales in this market.

3. Methodology

The research method is descriptive-analytical and in terms of mixed sequential exploratory strategy (qualitative-quantitative) which was implemented in the field. The statistical population of the qualitative part included eight marketers and experts in the field of marketing and neuromarketing and five neurologists and neuroscience specialists. The statistical population in the quantitative part included the consumers of cosmetic products of common brands in Iran, including My, Laboren, Cinere, Schon, and Hydroderm. The sampling method is clustered, non-random, and available. Considering that the statistical population in the present study is unlimited, based on the sample size formula in the unlimited population, according to $\alpha=0.05$, 384 people were selected as a statistical sample. To collect data, a neuromarketing researcher's questionnaire was used, which consists of 32 questions and includes the components of

emotion stimulation, use of metaphors and association of memories, crowd confirmation, product variety, quality, price, and fulfillment of commitments. The questionnaire is a closed-answer type and the measurement scale of the questions is a 5-point Likert scale, which is designed on a continuum from 1 (completely disagree) to 5 (completely agree).

Several steps were considered to make the neuromarketing questionnaire. In the first stage, which was done in the form of a library and referring to the information available on the internet, neuromarketing and its application in various fields of economy, trade, advertising, branding, and consumer behavior in different countries; additionally, a review of the theoretical foundations was investigated. In the second stage, by conducting qualitative interviews with eight marketers and experts in the field of marketing, neuromarketing and five neurologists and neuroscience specialists were used. It is worth mentioning that conducting qualitative interviews continued until theoretical saturation was reached. Then the identified variables were categorized in the form of components and presented separately. In the last stage, to analyze the data, descriptive statistics and Cronbach's alpha coefficient tests were used to determine reliability, and KMO tests and Bartlett's test of sphericity related to exploratory factor analysis in SPSS software and confirmatory factor analysis were used to determine and construct validity in LISREL software.

4. Result

The descriptive findings of the research are shown in Table 1.

| Component | Dimensions | Amplitude | Percentage |
|-------------------------------------|----------------------------|-----------|------------|
| Gender | Man | 137 | 35.7 |
| | Female | 247 | 64.3 |
| Marital status | Single | 30 | 7.8 |
| | Married | 354 | 92.2 |
| Age | Less than 20 years | 124 | 32.3 |
| | Between 20-30 years | 202 | 52.6 |
| | More than 30 years | 58 | 15.1 |
| Purchase history of cosmetic brands | Less than 1 year | 0 | 0 |
| | Between 1 and 3 years | 0 | 0 |
| | Between 3 and 5 years | 3 | 0.8 |
| | Between 5 and 10 years | 246 | 64 |
| | More than 10 years | 135 | 35.2 |
| Education | diploma | 17 | 4.4 |
| | Associate Degree | 83 | 21.6 |
| | Bachelor's degree | 224 | 58.3 |
| | Master's degree and higher | 60 | 15.6 |

Table 1. Descriptive findings of the research.

According to the values mentioned in table 2, it can be said that between the variables (adjusting the products according to the customer's exact demand, stimulating the customer's emotions and feelings, encouraging the customer to buy immediately,

offering a variety of products, offering quality products, appropriate pricing, and effectiveness products) correlation exists.

| Default | | Value |
|-----------------|--------------------|---------|
| KMO test | | 0.78 |
| Bartlett's test | χ^2 | 3483.59 |
| | Degrees of freedom | 21 |
| | Significance level | 0.001 |

Table 2. Bartlett's and KMO test results.

| Row | Variable | Number of questions | Alpha coefficient |
|-----|--|---------------------|-------------------|
| 1 | Neuromarketing | 32 | 0.95 |
| 2 | Adapting products according to the exact needs of the customer | 8 | 0.82 |
| 3 | Stimulating the customer's emotions and feelings | 4 | 0.94 |
| 4 | Persuading the customer to buy immediately | 3 | 0.82 |
| 5 | Offering a variety of products | 3 | 0.84 |
| 6 | Providing quality products | 4 | 0.71 |
| 7 | Reasonable pricing | 4 | 0.74 |
| 8 | Effectiveness of products | 6 | 0.79 |

Table 3. Cronbach's alpha coefficient results for research variables

Based on the relationship and T-Value of the seven variables with the concept of neuromarketing mentioned in Table 4, it is clear that all the relationships indicate the relationship between each variable and the scale of neuromarketing.

| Row | Variable | Concept | The extent of the relationship | The coefficient of determination | T-Value | Result |
|-----|--|----------------|--------------------------------|----------------------------------|---------|--------|
| 1 | Adapting products according to the exact needs of the customer | Neuromarketing | 0.76 | 0.58 | 15.99 | valid |
| 2 | Stimulating the customer's emotions and feelings | | 0.71 | 0.50 | 14.64 | valid |
| 3 | Persuading the customer to buy immediately | | 0.51 | 0.26 | 9.87 | valid |
| 4 | Offering variety products | | 0.64 | 0.41 | 12.87 | valid |
| 5 | Providing quality products | | 0.52 | 0.27 | 10.02 | valid |
| 6 | Reasonable pricing | | 0.63 | 0.39 | 12.55 | valid |
| 7 | Effectiveness products | | 0.58 | 0.34 | 11.48 | valid |

Table 4. The relationship between variables with the concept of neuromarketing.

According to the obtained results, the conceptual model of the research can be introduced as follows:

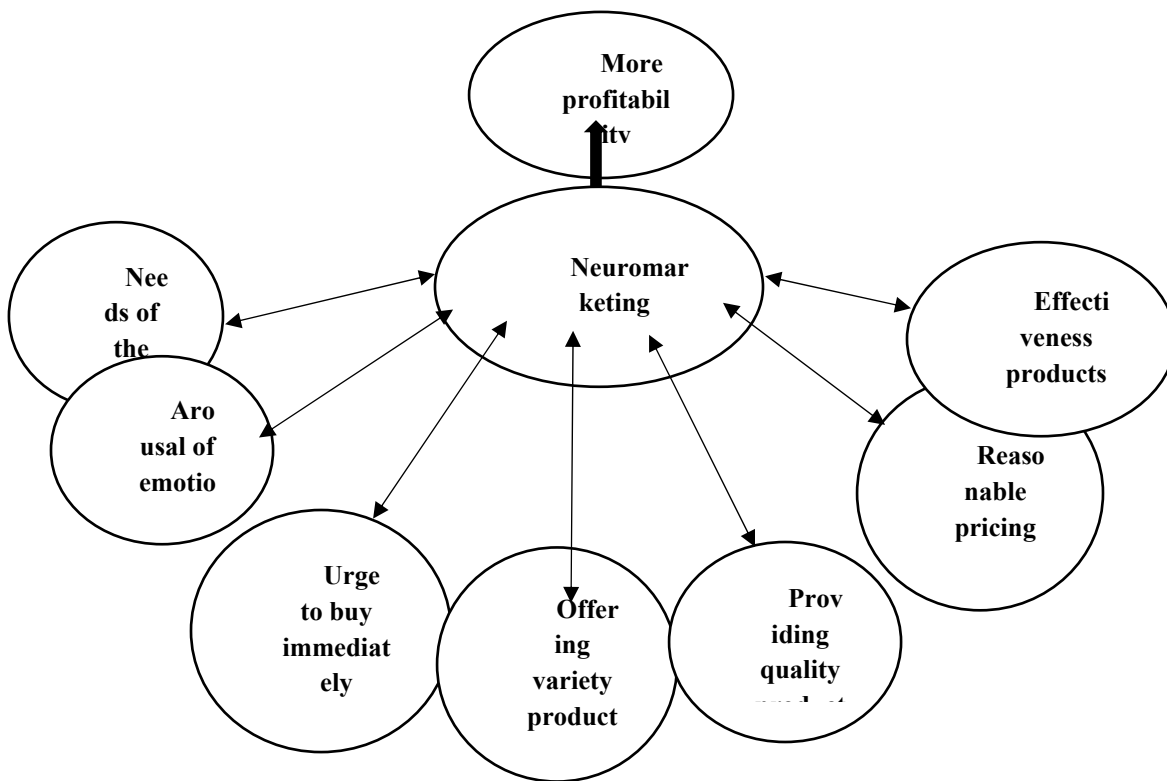


Fig 1. Conceptual model of research.

5. Conclusion:

Today, the use of traditional marketing techniques such as questionnaires, surveys, and opinion forms has become less popular. Many organizations use techniques to penetrate deep into the minds of customers to get strong feedback about their products.

Due to the high volume of advertisements in public media, neuroscience can be a vital tool for those important organizations that want to better understand their consumers and design suitable products. The main goal of neuromarketing is to carefully study consumer behavior, correctly understand customer preferences, and choose different brands. Neuromarketing helps to understand human decisions and puts a new dimension in front of experts to institutionalize new concepts and new achievements.

Enthusiasm for the brand and its dimensions, apart from trust in the brand, are related to neuromarketing and impulse buying behavior of consumers of cosmetic products. In the past research, no research was found to be aligned or not aligned with this hypothesis, but the most important reason for the alignment is that neuromarketing causes the analysis of the data obtained from the mind of the customers, which leads to the recognition and discovery of unconsciousness, as the customers themselves know. They don't have them, but they are strongly influenced by them.

Therefore, the supply of cosmetic products with superior quality and providing services to customers at a high level continuously creates competitive advantages for the company. If the customers are satisfied with the quality of the products and services of the manufacturing companies, the manufacturing companies of cosmetic products can achieve a higher profit. Considering the effect of neuromarketing on the price of cosmetic products, it can be stated that providing services to customers has many effects on pricing and profit. During the purchase, customers observe mental differences according to their nervous system and understanding of the type of products of the sellers, and this causes them to pay different prices. While presenting the history, definitions, and new tools of neuromarketing, this article deals with its effect on the supply of cosmetic products.

The results show that if a brand dedicated to cosmetic products wants to dominate in the market, it should pay attention to the needs and demands of the customer in the first stage to offer products in order to promote them. In the second stage, it should pay attention to its products and consider specifications such as variety, quality, and suitable prices for them. Finally, by benefiting from the new techniques of neuromarketing, it can clearly lead to the stimulation of the customer's emotions and feelings and encourage immediate purchase. These results are in agreement with studies by Nadanyiova [24], Nagyová, et al. [25], and Sebastian [26].

References:

1. Dźwigoł H. Research methods and techniques in new management trends: research results. *Virtual Economics*. 2019 Jan 17;2(1):31-48.
2. Harris JM, Ciorciari J, Gountas J. Consumer neuroscience for marketing researchers. *Journal of consumer behavior*. 2018 May;17(3):239-52.
3. Schmidt S, Wiedmann KP, Reiter P, Kurlbaum C. Anticipating the effects of marketing communication: A neuroeconomic framework for marketing purposes. *Handbuch Sozialtechniken der Kommunikation*. 2016;3:1-23.
4. Plassmann H, Venkatraman V, Huettel S, Yoon C. Consumer neuroscience: applications, challenges, and possible solutions. *Journal of marketing research*. 2015 Aug;52(4):427-35.
5. Krueger F, Meyer-Lindenberg A. Toward a model of interpersonal trust drawn from neuroscience, psychology, and economics. *Trends in neurosciences*. 2019 Feb 1;42(2):92-101.
6. Mansor AA, Isa SM. Fundamentals of neuromarketing: What is it all about?. *Neuroscience Research Notes*. 2020 Dec 3;3(4):22-8.
7. Yasir F, Haq MA. Neuromarketing-Seeing the Unseen: Effect of In-Store Category Artwork, Structures and Packaging on Shopper's Buying Behaviors in Pakistan. *Journal of Marketing Strategies*. 2022 May 30;4(2):227-45.
8. Klinčeková S. Neuromarketing—research and prediction of the future. *International Journal of Management Science and Business Administration*. 2016;2(2):53-7.
9. Baños-González M, Baraybar-Fernández A, Rajas-Fernández M. The application of neuromarketing techniques in the spanish advertising industry: Weaknesses and opportunities for development. *Frontiers in Psychology*. 2020 Sep 3;11:2175.
10. Al Abbas A, Chen W, Saberi M. The Impact of Neuromarketing Advertising on Children: Intended and Unintended Effects. *KnE Social Sciences*. 2019 Sep 19:1-6.
11. Grajdieru E. Neuromarketing and its internal marketing applications. *Bulletin of the Transilvania University of Brasov. Economic Sciences. Series V*. 2017 Jul 1;10(2):17-24.
12. Hilderbrand ML. *Neuromarketing: An essential tool in the future of advertising and brand development* (Doctoral dissertation).
13. Michael I, Ramsay T, Stephens M, Kotsi F. A study of unconscious emotional and cognitive responses to tourism images using a neuroscience method. *Journal of Islamic Marketing*. 2019 Jan 14;10(2):543-64.
14. Krajnovic A, Sikiric D, Jasic D. Neuromarketing and customers' free will. In *Proceedings of the 13th Management International Conference, Budapest, Hungary 2012 Nov 22* (pp. 22-24).
15. Venkatraman V, Dimoka A, Pavlou PA, Vo K, Hampton W, Bollinger B, Hershfield HE, Ishihara M, Winer RS. Predicting advertising success beyond traditional measures: New insights from neurophysiological methods and market response modeling. *Journal of Marketing Research*. 2015 Aug;52(4):436-52.
16. Singh S. Impact of Neuromarketing applications on consumers. *Journal of Business and Management*. 2020 Sep 1;26(2):33-52.
17. Nilashi M, Samad S, Ahmadi N, Ahani A, Abumalloh RA, Asadi S, Abdullah R, Ibrahim O, Yadegaridehkordi E. Neuromarketing: a review of research and implications for marketing. *Journal of Soft Computing and Decision Support Systems*. 2020 Mar 4;7(2):23-31.
18. Iloka BC, Onyeke KJ. Neuromarketing: a historical review. *Neuroscience Research Notes*. 2020 Sep 20;3(3):27-35.

19. Alsharif AH, Salleh NZ, Baharun R. Neuromarketing: Marketing research in the new millennium. *Neuroscience Research Notes*. 2021 Sep 14;4(3):27-35.
20. Zamani J, Naieni AB. Best feature extraction and classification algorithms for EEG signals in neuromarketing. *Frontiers in Biomedical Technologies*. 2020 Sep 30;7(3):186-91.
21. Bazzani A, Ravaioli S, Trieste L, Faraguna U, Turchetti G. Is EEG suitable for marketing research? A systematic review. *Frontiers in Neuroscience*. 2020 Dec 21;14:594566.
22. Gill R, Singh J. A study of neuromarketing techniques for proposing cost effective information driven framework for decision making. *Materials Today: Proceedings*. 2020 Nov 5.
23. Rawnaque FS, Rahman KM, Anwar SF, Vaidyanathan R, Chau T, Sarker F, Mamun KA. Technological advancements and opportunities in Neuromarketing: a systematic review. *Brain Informatics*. 2020 Dec;7(1):1-9.
24. Nadanyiova M. Neuromarketing-An opportunity or a threat. *Communications: scientific letters of the University of Žilina*. 2017 Apr 22.
25. Nagyová E, Horská E, Berčík J. Application of neuromarketing in retailing and merchandising. In *Neuromarketing in food retailing 2017* May 31 (pp. 197-232). Wageningen Academic Publishers.
26. Sebastian V. Neuromarketing and evaluation of cognitive and emotional responses of consumers to marketing stimuli. *Procedia-Social and Behavioral Sciences*. 2014 Apr 22.