



EFFECTS OF NEUROMARKETING ON MARKETING PERFORMANCE AND MARKET SHARE GROWTH: CASE STUDY OF SELECTED MANUFACTURING COMPANIES OF BUSHEHR PROVINCE, IRAN

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ARTICLE INFO

Article history:

Received 14 January 2019
Received in revised form 01 May 2019
Accepted 10 May 2019
Available online 17 May 2019

Keywords:

Business management;
Market share;
Information processing;
Business administration;
Neuroscience.

ABSTRACT

The present study aimed to investigate the effect of neuromarketing on marketing performance and market share growth among selected manufacturing companies in Bushehr province. The statistical population of the research included 177 senior managers, deputies, branch managers and administrative staff with more than five years of work experience in selected manufacturing companies of Bushehr province. In order to collect data, a questionnaire was used and consisted of three parts of the neuromarketing, marketing performance, and market share growth. In addition, the validity and reliability of the questionnaire were confirmed. This research had three hypotheses that have been analyzed using SPSS software. The results indicated that neuromarketing affects marketing performance and market share growth. Finally, marketing performance also affects market share growth.

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1. INTRODUCTION

Neuromarketing, a revolutionary innovation in marketing, has brought major changes to marketing science. By targeting the unconscious mind of the customers, neuromarketing encourages them to purchase and receive services without their awareness. Benefiting from close connections with medical science and neurology, this branch of marketing uses very modern techniques, making it a safe alternative for traditional advertising in the near future. Therefore, companies that are seeking new neuromarketing strategies and have the ability to adapt these strategies to their business conditions can expect to achieve a confident competitive advantage. Given this emergence of marketing, there is now a good situation to research and investigate neuromarketing strategies [1]. Researchers and specialists are

looking for new and combined ways of buying decision of consumers to increase the sales and effectiveness of advertising messages. For this reason, the neuroscience methods have been widely used in marketing, resulting in a significant increase in the scientific capacity of neuroscientists in recent years. These specialists directly study cerebral cortex activity at different time, place, and frequency. On the other hand, the integration of psychology and physiology has led to the application of techniques for tremendous advances in understanding the brain's activities and recognizing its different parts [2]. Today, many social science researchers use neuroimaging as a standard tool or research approach. In particular, the application of this concept has culminated when economics science began to use neuroimaging techniques, and a new discipline called neuroeconomics was established. Despite many common features in both scientific fields of marketing and neuroscience in various fields, marketing science has long not been able to utilize the benefits of using neuroimaging techniques [3].

So far, the research conducted on neuromarketing has generally focused on discussions related to the recognition of neural networks and their effects on the brain. Discussing the impact of this marketing style on competitive advantage and market share growth for organizations is one of the obvious gaps in the neuromarketing field. Thus, with the growth of the neuromarketing style and the familiarity of the companies with the practical strategies and methods, this marketing style can be one of the main needs of research on neuromarketing. Neuromarketing is regarded as a modern and growing field of marketing, which has various practical benefits. Conducting research in this area makes companies more familiar with the methods and styles of implementing and applying neuromarketing and provides new opportunities for marketing science. In addition, neuromarketing needs its own hardware requirements. In the case of conducting proper and adequate research on neuromarketing, companies interested in using this style of marketing can provide the necessary hardware for the successful implementation of this field and enter it into the country. Neuromarketing, a new branch of marketing science based on modern neuroscience techniques, allows better identifying and understanding of the brain mechanisms of consumers, in order to increase the organization's business efficiency. Neuromarketing can also be defined as a method that uses neuroimaging techniques to understand human behavior in relation to the market and marketing exchanges using a specific cortex response of the brain [4].

Market share is a part of the entire market that an organization assigns it to itself and adjusts its marketing plans to meet the needs. Generally, the creation and increase of market share is the only philosophy of the brands' formation and the powerful brand is associated with macro profits. The importance of promoting market share arises from the fact that the market share plays an important role in assessing the success or failure of a firm, growth opportunities and competitive power, obtaining reputation and ultimately, gaining profit and survival of the organization. Over the past two decades, many attempts have been made on the marketing field, especially relationship marketing, which is one of the symbols of increasing competition for acquiring more market share [5].

2. RESEARCH LITERATURE

2.1 THE TASKS OF THE NERVOUS SYSTEM

The nervous system is the main device of control, regulation, and communication of the body, and principally consists of the brain, spinal cord, nerves, and nodes (Ganglion), which are formed from different groups of cells, including the nerve, blood, connective tissue, respectively. The tasks/activities of the nervous system can be categorized into three related groups: sensory, integrative, and motion [6].

2.2 USING NEUROBIOLOGY AND BIOMETRICS IN MARKETING

The use of neurology helps to make practical marketing decisions. To the best of our knowledge, there are almost 90 private neuroscience laboratories, which are contracted by companies to implement applied studies on consumer behavior, perspectives, and different topics. These studies also perform at several university centers, some carrying out research supported by the industry. A marketing research company [8] tested the television advertising related to health products, and the results of the questionnaire were combined with the non-verbal diagnostic mode of brain electroencephalogram. Both approaches yielded very similar results in identifying tested advertising scenes, which generated the strongest and weakest emotional response. As a result, verifying what marketers have in mind relative to traditional studies rarely justifies extra costs. Therefore, apart from revealing the general tendencies in consumer reactions, neuroscience is the most useful science in practical studies from the viewpoint of some industry experts [15], when it deals with sensitive individual subjects and the discovery of implicit relationships. Currently, many client companies who are conducting research on basic neuromarketing are not afraid of the Frankenstein style tests.

2.3 NEUROMARKETING

Neuromarketing combines the scientific disciplines of psychology, neuroscience, and neurology to measure and assess the biological responses in facing marketing stimuli (marketing strategies, communications, advertisements, new and available products). Researchers use technologies such as functional Magnetic Resonance Imaging (fMRI) to measure changes in various segments of the brain and electroencephalography, in order to evaluate activity in a specific segment of the brain and to study how decisions are made by customers and the areas involved in brain decision making. Large companies have established active laboratories in the field of neuromarketing to predict customer behavior or interact with academic departments. Neuromarketing is a promising new type of marketing with a completely interdisciplinary nature and a combination of management science, neuroscience, psychology, and maybe some kind of art. Simply, neuromarketing is the basic research of consumer behavior using modern and accurate scientific tools.

2.4 THE DIFFERENCE BETWEEN TRADITIONAL MARKETING AND NEUROMARKETING

In traditional marketing, the customers normally have a lot of information related to the products and thoroughly investigate before making any purchase. Further, it is assumed that

customer purchases are the result of his prior knowledge and information. It is possible to change the customers' opinions only when new information is transferred to the customer and show that the previous information is not correct and the customers need to review their decisions before making their best and wisely purchases. In the traditional model, this new brain is deciding, however, contrary to such a claim is proved in the neuromarketing model. Interestingly, many customers, even in complex and technical purchases, buy products, although they do not have enough information about it.

2.5 MARKETING PERFORMANCE

A good performance in marketing is desired to send the needed products to target markets. The success is also influenced by factors such as other parts of the company, intermediaries, competitors, and the community. Since the survival of organizations depends on the ability to create value, which is defined by the customers. Evaluating marketing performance is a key task for management. The achievement of organizations to their financial and marketing goals in today's competitive environment requires both effective and efficient marketing.

2.6 MARKETING, LOYALTY, AND TRUST

Marketing is possibly considered as a philosophy seeking to express why and how an organization must adapt itself to its target market and penetrate into. Marketing is a long-term relationship of efforts made by organizations and consumers, which are targeted coordination and interdependence. The two concepts of loyalty and trust are important in marketing and companies should have the ability and willingness to change their behaviors for each customer. Furthermore, companies should behave differently in marketing with different customers.

2.7 EVALUATION OF MARKETING PERFORMANCE

The evaluation of marketing performance is necessary and only a few studies have comprehensively addressed the criteria for evaluations of marketing performance, and most studies have generally considered this issue, due to the complexity of short-term effects relative to long-term effects, the problems of measuring brand value, and perhaps the excessive attention paid to business management by financial criteria. Based on the results of marketing efforts, marketing performance evaluation systems provide inputs for decision making and planning for the future. Traditionally, marketing productivity analysis (from the efficiency viewpoint) and the concept of marketing audit (from the effectiveness viewpoint) are the dominant approaches to evaluate marketing performance. However, these do not provide a comprehensive framework for integrated evaluation, due to executive and conceptual limitations.

2.8 MARKET SHARE GROWTH

Market share, an indicator to assess performance in the market and relative to competitors, is a determinant factor of profitability in mid- to long-term. Modern marketing focuses on creating products and services matching to the needs and demands of the customers. The focus is to provide satisfaction and create value for the customers. In recent years, the scientific and empirical advances in marketing have led to the expansion

of its application fields and the increases the success rates, which have turned product marketing into "something beyond advertisements and promotions, and giving hope."

3. HYPOTHESES AND RESEARCH MODEL

This research testes three hypotheses, based on the presented concepts intend to study the relationship between neuromarketing and marketing performance and market share growth and also study the relationship between marketing performance and market share growth (see Figure 1).

1. Neuromarketing has an effect on marketing performance.
2. Neuromarketing has an effect on market share growth.
3. Marketing performance has an effect on market share growth.

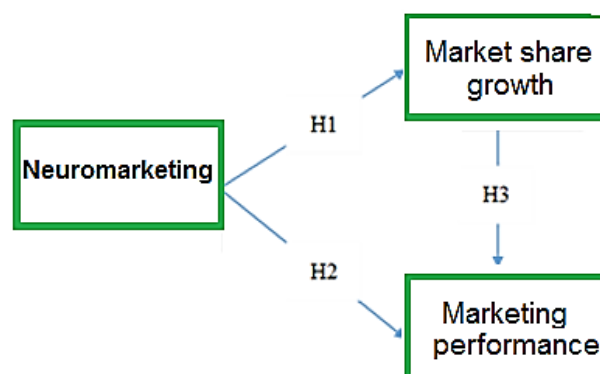


Figure 1: Research model.

4. DATA ANALYSIS AND RESULTS

Since the researcher seeks to study the effect of neuromarketing on marketing performance and market share growth, the manufacturing companies of Bushehr Province have been selected as a statistical population of this research. The research data has been collected with the questionnaire, with 177 respondents including senior managers, deputies, branch managers and administrative staff with more than five years working experiences in selected manufacturing companies of Bushehr Province. Reliability of the questionnaire has been confirmed with Cronbach test given in Table 1. To analyze data, the collected data is sported and classified with Excel® software and then studied and analyzed with SPSS® software.

Table 1: Questionnaire data distribution and reliability test (n = 177).

Questionnaire	Mean	SD	Min. value	Max. value	Cronbach's alpha
Neuromarketing	3.81	1.84	1	5	0.715
Market share growth	3.42	1.89	1	5	0.734
Marketing performance	3.56	1.83	2	5	0.859
Total					0.769

The data descriptive indices are divided into three groups of Measures of Central Tendency (mean), Coefficient of dispersion (standard deviation) and Measures of Distribution.

4.1 TESTING THE RESEARCH HYPOTHESES

4.1.1 EFFECT OF NEUROMARKETING ON MARKETING PERFORMANCE

First hypothesis: Neuromarketing has an effect on marketing performance. Table 2, the more the standard coefficient value, the higher the effect it will have. From the t-statistic test at confidence level 95%, the significance level is less than 0.05 thus it is clear that the effect has been significant and the hypothesis is confirmed.

The regression equation of this model is as,

$$\text{Marketing performance} = (-0.643) * \text{Neuromarketing} + 0.922 \quad (1).$$

Table 2: Statistical result for the first hypothesis.

Model	Non-standard coefficients		Standard coefficients	t-statistic	Significance level	
	B	SD	Beta			
1	Constant	.922	.207		4.457	<0.001
	Neuromarketing	-.721	.069	-.643	-10.512	<0.001

4.1.2 EFFECT OF NEUROMARKETING ON MARKET SHARE GROWTH

Second hypothesis: Neuromarketing has an effect on market share growth. Table 3, the standard coefficient has been obtained as 0.409 for Neuromarketing variable and since its significance level is below 0.05, it is concluded that this effect is significant. The second hypothesis is confirmed. The regression equation of this model is as:

$$\text{Market share growth} = 0.409 * \text{Neuromarketing} + 2.562 \quad (2).$$

Table 3: Statistical result for the second hypothesis.

Model	Non-standard coefficients		Standard coefficients	t-statistic	Significance level	
	B	SD	Beta			
1	Constant	2.562	.178		14.363	<0.001
	Market share growth	.333	.059	.409	5.654	<0.001

4.1.3 EFFECT OF MARKETING PERFORMANCE ON MARKET SHARE GROWTH

Third hypothesis: Marketing performance has an effect on market share growth. Table 4, the standard coefficient has been obtained as 0.394 for marketing performance variable and since its significance level is below 0.05, it is concluded that this effect is significant. Therefore, this hypothesis is confirmed. The regression equation of this model is as:

$$\text{Market share growth} = 0.394 * \text{Marketing performance} + 1.433 \quad (3).$$

Table 4: Statistical result for the third hypothesis.

Model	Non-standard coefficients		Standard coefficients	t-statistic	Significance level	
	B	SD	Beta			
1	Constant	1.433	.088		10.276	<0.001
	Marketing performance	.102	.034	.394	3.994	<0.001

5. CONCLUSION AND SUGGESTION

Neuromarketing, a new branch in marketing sciences, can contribute to the success of

companies in marketing programs and market share growth. Using new methods and techniques based on recognition of human brain performance is one of the evident characteristics of neuromarketing system which encourage customers to purchase products by directly affecting their nervous system.

Results of this research specified that using the Neuromarketing methods could positively affect marketing performance and market share growth. Therefore, on this basis, the trading companies active in Bushehr Province are suggested to:

- Identify methods and performance of the Neuromarketing-based systems in the first step and consider training and prerequisites for the establishment of the Neuromarketing systems in their firms.
- Considering expansion of the Neuromarketing strategies, the companies which include the use of Neuromarketing methods in their working program are suggested to identify suitable strategies related to their commercial performance and use the strategies which can be more compatible with their trading conditions.
- Finding Neuromarketing strategies can be effective in demand for the goods produced by the companies and also can lead to suitable financial benefits for the organization while creating more market share. In this regard, managers of the firms active in Bushehr Province are suggested to utilize the price benefits which Neuromarketing can bring by identifying the best and the most suitable conditions for supply and demand of goods.

Every organization uses clear methods and procedures to provide their products with the minimum production cost. One of the fields which Neuromarketing can increase the competitive ability of the firm is the reduction of costs. Marketing managers of the firms active in Bushehr Province of Iran are suggested to use very innovative and creative methods which neuromarketing provides for the provision of products and services. The said methods may be expensive in the first instance due to the use of very new technologies, but the company will gain such competitive ability to provide all information related to the customer's request based on their demands and save the current production expenses after settlement of these tools due to gaining very precise information from demands and needs of the customers and careful accountability to these needs.

6. REFERENCES

- [1] Arad, M. 2017. *Studying the relationship between systemic thought, knowledge management and marketing innovation and sustainable competitive advantage, case study: Keshavarzi banks of West Mazandaran Province*. Shiraz University Publication, Shiraz, Modiran Khebreh Narvan Educational Institute.
- [2] Babae Zangiani, M. 2017. *Studying the relationship between information and communication technology and knowledge management*. UAE-Dubai, Culture and Technology Research Center - Culture and Art Research Center
- [3] Bozorgnejad, A. and Ghasemi, M., 2016. *Studying the effect of technology, culture and organizational structure on knowledge management process at Islamic Azad University, Kish International Branch, Tehran*.
- [4] Sharifi, M., Khademi Zare, H., and Vahdatzad, M. 2016. *Ranking components of organizational learning through factors of human resource productivity with Structural Equation Model and Analytical Network Process*, Tehran.

- [5] Tabaresa, Gh. and Tavakoli, A., 2017. *Studying the effect of human resource system with high performance working methods on organizational performance*. University of Tehran.
- [6] Abedini, S., Vahedi, H., 2017. *Studying role of organizational intelligence and organizational learning in explaining the relationship between knowledge management and organizational innovation*. University of Tehran.
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