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Attitude Measurement toward Neuromarketing in Sports

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ABSTRACT The aim of the current research is to measure the attitudes toward the neuromarketing in sports in three groups of masters of sports management, neuroscientists and marketing professionals. Three sub-scales of interest and participation in neuromarketing, consciousness and cognition, and morality were studied and compared among these three groups. The research methodology is descriptive-survey and the sample size includes 90 masters of sports management, 70 neuroscientists and neurologists and 140 professionals in marketing of the sporting goods. Data analysis about the neuromarketing in sports in three sub-scales of interest ad participation, consciousness and recognition and morality among the masters of sports management, neuroscientist and professionals of marketing had significant difference. Compared to the other groups the neuroscientists had more favorable attitude toward the interest and participation in neuromarketing in sports. Masters of sports management had less consciousness and recognition about the neuromarketing in sports in comparison to the other groups, and professionals in marketing had more concurrence than the other groups about the fact that neuromarketing is a moral method and it is not a deceptive method.

KEYWORDS Attitude Measurement, Neuromarketing, Sports Marketing.

INTRODUCTION

In today's world several noticeable changes are seen in different fields, especially in the current economic conditions of the world and markets. These changes permanently affect the global business activities and along with them they have economic and business opportunities and threats for the societies. In the world full of changes, companies and institutes are successful that pay attention to the fast global changes, fast marketing changes, competitors' state, distribution systems, group media, new technologies and briefly pay attention to the marketing and marketing management. Companies will be famous and reliable if they pay attention to their real mission which is the customer's satisfaction, and through better satisfying their needs they will surpass the competitors, furthermore, they should be committed to their social responsibility and the social welfare and the substantial benefits of their society (Alipour, 2012). The goal of marketers is to understand the method of consumer's behavior and making the right decisions

(Anonymous, 2002). Theories and models of researches about the consumers' behavior have changed during the current years (Bagozzi, 1999). In these models the qualitative research methods play the most important role in determining the perception and motivation of the consumers and the process of decision making (Richie, 1994).

It is at least four decades since the marketers talk about the costumer's satisfaction. Unfortunately satisfaction was a short-life phenomenon and researches show that even the satisfied customers regularly leave the organization. There is an explanation about this riddle in the humans' mind; neuromarketing is a neurological explanation about the matter that why the professionals of marketing recommend the companies and institutes to give priority to giving pleasure to the customers than satisfying them. During the past years, understanding the customers' behavior has become very important, and neuromarketing is a giant step in order to achieve this. As Martin Lindestrom states in the Buyology book, the buying decisions are never as logical as we think and they will never be (Lawer, 2004). For example while stepping to a bank, customers may choose services based on their thoughts and emotions which they are not aware of, they are attracted to a service in a blink of eye by a special provider without knowing why (Karimi, 2005).

Varian, the marketing researcher states that the existing models for describing the event of human behavior were not enough, especially the models related to consuming. Varian declares that the economic model chosen by the consumer, which is usually studied, is simple and beautiful. This model is the logical starting point for different analyses, but definitely it won't be complete. In some cases using deeper model of consumer's behavior is needed for a more overt description of decision making (Eser, 2011). Using the analysis of consuming patterns, Ross and et al provided an interesting research and they defined the method of achieving a formation of interpersonal decisions in a market, which within the personal balance among different interests is achieved through negotiation. This research is a part of neuroeconomics which is conducted by the support of laboratory researches and methods of subjective imagination. It was during the recent years when the marketing researches and studying the consumers' behavior paid special attention to the neuroscience in order to answer the causes of decision making of the consumers. From here the neuromarketing started to appear. At first the modern psychology was combined with technology in order to describe the decision making processes in brain. Then the theory of economic behavioral decision making was adjusted in the light of research results of neuroscience. Recently it has been revealed that emotions have a very important role in the process of decision making, and especially they are important in decisions which are along with the behavior of the consumers. In studies of neuroscience when the emotional processes are studied, it shows that emotions act preliminary and they have the first role in making effective decisions about the concepts, and understanding the perception and behavior of one individual. Concepts and understanding of the emotional processes are essential and important for the progress and development of the marketing and marketing competitions. In fact the successful labeling and advertising is related to the understanding and progress of one emotional attraction toward the consumers (Tovino, 2005).

People intend to see the world's need from their own perspective. This matter is used in refining and processing the perception and deductions which are important in environmental information extraction, because brain tries to create the most efficient

search for the possible random relationship between the multi-variable information, which ultimately creates perception and deduction. In general, this deduction won't be more than a choice among the several interpretations, because at the end if the brain is forced to process, record and register all of the created information it will possibly explode. As a result this question comes to mind that how does the consumers' brain process the concepts and percepts?.

A part of the brain which is responsible for processing the signals and signs from the primary perspective and view is the cingulate cortex. After cingulate cortex, the information flow to the forebrain and especially to the frontal lobe. The information takes two paths, the primary and secondary paths. The primary flows in the top of the brain and it is route classified, and it discharges the information from the place where the objects are placed in the space and the place in relation to the body. Also the secondary is a road and a route which is continued through the temporal lobes and it is placed above the ear, and it processes the visual information for classifying the thing the individual has seen. Similarity of these two paths happens in the longitudinal axis and also among themselves, because it is in fact the understanding of thesaurus which is transferred through eyes to the brain. Neuroscientists believe that understanding and visual perception is widely the result of expectations and statistical predictions.

Understanding and perception and concept are ways that the brain interprets the vague clues through the most probable explorations and searches which is the result of previous experiences. Thus the importance of neuromarketing in understanding of decisions of human is very high. Neuromarketing as one of the branches of cognitive neuroscience is based on the ability to depict the method of understanding the decision items and process of decision making by the brain. This branch of marketing studies the sensors and emotional responses of the customers to the marketing stimuli.

Thus if the marketers are able to determine that which picture of the product results in the reaction in the frontal cortex of the brain, they will be able to improve their sell (Kenning & Plassmann, 2005). The methods used for this purpose are psychophysics (reaction time/detection level) and FMRI (functional magnetic resonance imaging). Researchers use FMRI in order to determine the changes of the activities of parts of the customers' brain and they also use the EEG in order to evaluate the activity in a special regional spectrum of the response of brain, and they use special sensors in order to know why the customers make a special decision and that which part of their brain tells them to do a special thing (Kenning & Plassmann, 2005).

The concept of neuromarketing was proposed by psychologists of Harvard University in 1990 and companies such as Google, CBS and Frito-Lay used the neuromarketing services for evaluating the consumer's thoughts about the advertisements or their products among other companies (Kamali, 2000). Several reasons exist for the empty spot of neuromarketing in the marketing science. Academically in general, neuroscience and psychology are indicators of frightening subjects. Additionally most of the professional marketers see the imaging technics unattainable and out of their special field. One of the solutions for this matter is creation of interdisciplinary specialties and/or cooperation between the business research groups and the neuroscience (Lee et al, 2007). Thus the neuromarketing is a promising concept for a new kind of marketing which has a complete interdisciplinary nature. It is the place where the management science, neurology, psychology and perhaps the art connect each other and they give

the possibility to the service or product provider companies to sell one box more than other companies in the current competitive market (Kamali, 2000).

Currently it is long passed since the time that the interdisciplinary studies find their way among the new sciences, and generally the professionals welcome the concept of using the beneficial functions of other special fields in their favors. Naturally the professional marketers are not exceptional. Thus recognizing these new technics has become one of the biggest challenges of the marketing field. With the attitude of this research toward this matter, it tries to answer this question that how and in what way the dimensions of neuromarketing could be used in attracting the customers and especially the customers of sports markets and how the neuromarketing realizes these goals while it has access to the technics which in the traditional marketing paths this goal is not attainable? Professionals and managers of marketing, professors and neuroscientists as people who are somehow professionals in the researches of neuromarketing, what type of attitude do they have toward this and how is the difference between their perspectives?

MATERIALS AND METHODS

The current research methodology is descriptive-comparative and three groups of professionals such as professors' of sports management, neuroscientists' and marketing professionals' attitudes are described and compared here.

Participants

The current research statistical population includes all of the professors of sports management, and professors of marketing management of universities and institutes of higher education and neuroscientists including neurologists, physiologists, psychologists and professionals in learning and behavior.

The sampling method is purposive sampling. A set of 450 Email addresses and addresses were collected from the population all around the country and the questionnaires were sent to the email addresses and the addresses. During three weeks three reminders were sent to them in order to increase the participation of respondents and increase their participation in the research.

Neuromarketing questionnaire in sports

This questionnaire was adjusted by Eser et al (2011). The mentioned questionnaire consists of 14 questions measuring three sub-scales of interest and participation, consciousness and cognition, and morality. Four questions of this questionnaire were about morality, three questions about consciousness and cognition and 7 questions about interest and participation. The scale of measuring the answers was a five-value scale including items of completely agree, agree, no comment, disagree, and completely disagree, which the score of 5 is for completely agree and the score of 1 is determined for the item of completely disagree.

These researchers detected the most important factors of neuromarketing for construction and validation of these tools firstly by the formation of a group of 6 individuals consisting of two university professors, two neuroscientists, and two marketing professionals in Turkey, and the high cost, interest and participation and moralities were the subjects of complete agreement among the members. Then in a preliminary test the questions of questionnaire were reviewed by 10 university professors, five neuroscientists and five marketing professionals in order to avoid any

misconceptions. At the end after conducting some minor reformations in the questionnaire it turned to a developed assessment tool and again it was handed to the above mentioned professionals.

The Cronbach's alpha was used in order to determine the validity of questionnaire from the perspective of professionals and specialists and also in order to study the reliability of the questionnaire. The amount of achieved Cronbach's alpha of 0.71 shows that the questions of questionnaire have enough reliability.

Data collection

In order to collect the required data, after adjusting the questionnaire it was sent to the respondents through Email addresses and postal addresses. For increasing the participation of respondents three reminders were sent to them during three weeks in order to increase their participation in the research.

Data analysis

In order to describe and analyze the data, firstly by the use of the descriptive statistics, mean, standard deviation, table and diagram, the research variables were described. Also in order to determine the homology and congruence of the groups the Kolmogorov-Smirnov tests were used. The ANOVA test was used for comparing the attitude of three groups of professors of sports management, neuroscientists and marketing professionals, and the Scheffe's test was used for determining the difference between groups. The significance level of the current research was 0.05.

RESULTS

The data analysis results showed that a difference exists between the attitude of professors of sports management, neuroscientists and marketing professionals in sub-scale of interest and participation of neuromarketing in sports (table 1).

Table 1. One-way ANOVA test.

	Total Square	df	Mean Square	F	Sig.
Intergroup	139.309	2	69.654	5.299	0.005
Intragroup	3903.771	297	13.144		
Total	4043.080	299			

The results of Scheffe's test showed that the significant difference only exists between the mean of group of marketing professionals with neuroscientists. The difference between the mean of these two groups was -1.585 ($p \leq 0.05$) and there was no significant difference between the group of professors of sports management and two other groups (table 2).

Table 2. Results of testing the means (Scheffe).

1st Job	2nd Job	Mean Difference	SD	Sig.
Marketing Professionals	Neuroscientists	-1.58571*	0.53071	0.012
	Professors of Sports Management	-1.11905	0.48983	0.075
Neuroscientists	Neuroscientists	1.58571*	0.53071	0.012
	Professors of Sports Management	0.46667	0.57777	0.722
Professors of Sports	Neuroscientists	1.11905	0.48983	0.075
	Professors of Sports Management	-0.46667	0.57777	0.722

*At significance level of $p \leq 0.05$ it is meaningful.

Results achieved from the one-way ANOVA test about the sub-scale of consciousness and cognition shows that there is a difference between the attitude of professors of sports management, neuroscientists and marketing professionals in this sub-scale (table 3).

Table 3. Results of one-way ANOVA test.

	Total Square	df	Mean Square	F	Sig.
Intergroup	434.182	2	217.091	26.868	0.000
Intragroup	2399.765	297	8.080		
Total	2833.947	299			

Results of Scheffe's test in relation to this sub-scale showed that there is a significant difference between the mean of group of professors of sports management with two groups of marketing professionals (with mean difference of -2.701 and significance level of 0.000) and neuroscientists (with mean difference of -2.444 and significance level of 0.000) but no difference exists between two groups of marketing professionals and neuroscientists (table 4).

Table 4. Results of testing the means (Scheffe).

1st Job	2nd Job	Mean Difference	SD	Sig.
Marketing Professionals	Neuroscientists	0.25714	0.41549	0.901
	Professors of Sports Management	2.70159*	0.40730	0.000
Neuroscientists	Neuroscientists	-0.25714	0.41549	0.901
	Professors of Sports Management	2.44444*	0.51660	0.000
Professors of Sports	Neuroscientists	-2.70159	0.40730	0.000
	Professors of Sports Management	-2.44444*	0.51660	0.000

*At significance level of $p \leq 0.05$ it is meaningful.

Comparing the perspective of professors of sports management, neuroscientists and marketing professionals in sub-scale of moralities of neuromarketing in sports showed a significant difference.

Table 5. One-way ANOVA test analysis.

	Total Square	df	Mean Square	F	Sig.
Intergroup	789.011	2	394.505	53.249	0.000
Intragroup	2200.386	297	7.409		
Total	2989.397	299			

In table 5 the results of Scheffe's test between three perspectives in sub-scale of moralities of neuromarketing are presented.

Table 6. Results of testing the means (Scheffe).

1st Job	2nd Job	Mean Difference	SD	Sig.
Marketing Professionals	Neuroscientists	2.77143*	0.32881	0.000
	Professors of Sports Management	3.53810*	0.41519	0.000
Neuroscientists	Neuroscientists	-2.77143*	0.32881	0.000
	Professors of Sports Management	0.76667	0.43663	0.224
Professors of Sports	Neuroscientists	-3.53810*	0.41519	0.000
	Professors of Sports Management	-0.76667	0.43663	0.224

DISCUSSION AND CONCLUSION

Results of the current study showed that the attitude of three groups of professors of sports management, professionals and neuroscientists and marketers toward the neuromarketing in sports was different from each other. This result was consistent with the research finding of Eser et al (2011). In a similar research they concluded that a significant difference exists between the perspectives of three groups of professors, neuroscientists and professional marketers about the neuromarketing.

Comparing the sub-scale of interest and participation in neuromarketing of sports in three groups of professors of sports management, neuroscientists and sports marketers showed that a significant difference exits between these three perspectives. This difference is in a way that it is observable in the group of neuroscientists and sports marketers, and the results of post-hoc test show that the neuroscientists have a positive and more favorable attitude toward this matter. This finding was predictable, because the neuroscientists are more familiar with the applications of neuroimaging, due to their job and they have more belief on the progress of this science in the future. In the research of Eser et al (2011) the results also showed that the interest and participation in three mentioned groups have significant difference but this difference is caused by the difference of attitude between the professors and neuroscientists, in a way that the neuroscientists have more favorable attitude toward the interest and participation. This result is different from the current research finding, because in this research the attitude and perspective of neuroscientists is different from the sports marketers' and it is more favorable than theirs.

But comparing the sub-scale of consciousness and recognition of neuromarketing in sports in three groups of professors of sports management, neuroscientists and sports marketers showed that a significant difference exists, and it is in a way that the attitude of all of the three groups is different from each other. Marketing professionals had a more favorable attitude toward the consciousness and recognition about the neuromarketing in sports than the professors of sports management. On the other hand the neuroscientists also had a different and more favorable attitude toward the consciousness and recognition about the neuromarketing in sports than the professors of sports management. Thus the amount of consciousness and recognition about the method of neuromarketing researches in sports in group of professors of sports management is less than the two other groups.

Eser et al (2011) also came to the same conclusion. They showed that more consciousness and recognition in the three above mentioned groups had significant difference as such the neuroscientists had more consciousness and recognition than the professors about this matter. This result was consistent with the current research finding. It seems that the reason that the professors of sports management have less information than other groups about the method of neuromarketing researches is that the management field is a wide area and sports management is a concept that includes a wide range of subjects related to the sports sciences. Although the sports marketing has been at the center of attention in this field, up to now no researches have been observed about the sports marketing by the use of neuromarketing technics in the country. Thus very few conducted researches in this field by the researchers are the main causes of their unfamiliarity with this subject.

Findings of this research showed that the sub-scale of morality in neuromarketing in sports in three groups of professors of sports management, neuroscientists and sports marketers is different as such the marketing professionals have a positive and more favorable attitude than the two other groups. This finding is also consistent with the research results of Eser et al. They also concluded that the moralities in three groups of professors, marketers and neuroscientists have significant difference and the marketing professionals have a more favorable attitude toward this matter than the professors. This matter that the marketing professionals show a more favorable attitude toward the moralities in neuromarketing was not far-fetched. Paying attention to the ethics and maintaining the honesty in the marketing is one of the basic principles. They are obliged to pay attention to these principles in their profession. Thus the marketing professionals consider the methods used in the marketing as ethics according to the code of conduct.

Up to now few studies in the field of neuromarketing has been in the form of conceptual studies. It is recommended that the future studies survey and study the applicable method of this matter.

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