

Neuromarketing: A New Avatar in Branding and Advertisement

Md.Hafez,

Assistant Professor,
School of Business,
Ahsanullah University of Science and
Technology, Dhaka, Bangladesh,

Abstract

The purpose of the study is to highlight the neuromarketing concept and its application on brand building and advertising campaign. This study also examines the brain activates of human, and the critical role of neuromarketing in the marketing field. Exploratory research of in-depth content analysis has been used in this study to gain a depth understanding of the neuromarketing and its application on branding and advertisement. For accomplishing this purpose, secondary data has been collected from various journals indexed by Google Scholar, Scopus, Thomson Reuters. In this study, it is found that sometimes people are unable to describe their true feelings and emotions towards a particular brand or advertisement which can be deeply explored by neuromarketing. After a brief explanation of different neuromarketing tools like fMRI, EEG, MEG, Eye tracking method, this paper examines how neuromarketing tools can effectively be used in brand building and advertising campaign. The previous results indicate that if stimuli related to a brand or advertisement activates the hippocampus, dorsolateral prefrontal cortex, and midbrain, customers will certainly purchase the brand. This study makes a significant contribution by opening up a human “Black Box” and presents a deeper perspective on how and why customer behaves differently in terms of buying behavior. In particular, the brand marketer should build a strong, favorable and positive brand image in customer's mind and advertisement should include deep emotional context so that it can activate emotional brain which in turns lead to purchase decision. This research contributes to the existing literature by examining the impact of neuromarketing strategies on brand building and advertising campaign. This study deepens our understanding regarding the applications of neuromarketing on branding and advertising. In addition, the present study is the first to propose a brand new model for brand building and advertising campaign based on previous empirical findings of neuromarketing.

Key Words: Neuromarketing, Branding, Advertisement, fMRI, EEG, MEG

Introduction

At present, market is highly competitive. It is very difficult for the marketers to survive in highly competitive global market without fully knowing about consumer behavior. Every day, people are bombarded with thousands of advertisements but human brain can

only process a limited amount of information (Kotler and Armstrong, 2012). Marketers' spending on total media advertising has reached \$628.63 billion worldwide in 2018 (eMarketer.com,2018). Measuring the effectiveness of an advertisement by self reported methods i.e., questionnaires, face-to-face, telephone interviews is a difficult task because there is a huge difference between what the customers think and what brand they finally buy. Marketers can formulate a more effective marketing strategy only when they get accurate information about why and how the customers make their buying decisions. Studies demonstrate that most of the customer purchase decisions are made in subconscious mind (Zaltman, 2003). Now, marketers are very much aware of the subconscious process in the mind of customers to develop new brand (Felix, 2008). There is an urgent need to use neuromarketing which combines neuroscience, clinical psychology and economy. By using neuromarketing tools, marketers can easily find out how customers react to products, brands and commercials which is not possible in traditional marketing method. It will be beneficial for both customers and marketers. Customers will get more customized product what they really want in the market place and marketers can save huge amount of money that are currently used in unproductive and ineffective campaign (Dooley, 2010).

In the light of recent development in the use of neuromarketing tools in branding and advertising research, the authors of this article are asking one important question: Is there any scope for the improvement in measuring advertising and branding success through neuromarketing tools? Can neuromarketing research on branding and advertising effectiveness benefit marketers from traditional marketing methods? To answer this question, we first review previous literature related to neuromarketing and present key findings of neuromarketing research on branding and advertising effectiveness. Second, we briefly discuss how the results and implications of neuromarketing research guide marketer to develop effective marketing strategies. Finally, a brand new model for improving value added marketing performance will be proposed based previous empirical research on neuromarketing.

Although the concept of neuromarketing first appeared in around 2002 (Morin, 2011), very few studies are conducted on neuromarketing specifically on branding and advertisement. However, this study is an endeavor to explore how neuromarketing research assists to develop better branding and advertisement strategies. We hope that our observations will help researchers to implement branding and advertising effectiveness research in advance level.

Methodology

Neuromarketing is fairly novel field in marketing (Morin,

2011, Dinu et al., 2010). Thus, exploratory research method is used in this research to analyze in-depth content of neuromarketing. In-depth content analysis refers to the set procedures that are used to describe different useful contents of a specific topic (Bardin ,1977). Therefore, important literature review is chosen for analyzing in-depth content of neuromarketing research because it is possible to accumulate previous findings and experiences from literature reviews. Because of the tremendous time and cost exposure, no complete research can be conducted concerning the topic of neuromarketing. Peer-reviewed academic articles indexed by Google Scholar, Scopus, Thomson Reuters are the prime source of compilation raw data used in literature review.

Relationship between Marketing and Neuromarketing

Marketing is about identifying and meeting human and social needs (Kotler & Keller,2012). According to Ariely and Berns (2010), marketing means presentation of goods and services based on consumer needs so that customer can make buying decisions easily. While considering the concept of neuromarketing, the critical issues are altered based on how marketers gather information about customer preferences and wants (Ariely, & Berns, 2010).The term neuromarketing first introduced by Ale Smidts in 2002. The founder and driving force of the discipline is Professor Martin Lindstrom (Oxford University). He conducted his research on over 2000 experimental brains by exposing different marketing stimuli like effect of sublimed messages, unoriginal brands and logos, health and security warnings, product design and packaging. He concluded that most of the customers made final buying decisions at subconscious level (Lindstrom, 2009). Calvert and Brammer (2012) said that neuromarketing techniques are more useful to observe subconscious responses of the brain. Neuromarketing helps to build up better understanding about how human brain processes information (Georges et al., 2014). Kotler and Keller (2012) asserted that neuromarketing is a tool used to know how different marketing stimuli such as exposure to certain advertisement influencing buying decisions.

Why Neuromarketing instead of Conventional Marketing Research?

Neuromarketing is a novel field in marketing developed by Gerry Zaltman which includes neuroscience, psychology, and economics. It helps marketers to know how the human brain is physiologically affected by advertisement and marketing strategies (Lee et al.,2007; Madan,2010). The nature of neuromarketing research is completely different from conventional marketing research. In conventional marketing research, information of customer's preference is collected by self reported methods through interviews, survey, focus groups etc. But this conventional method is not

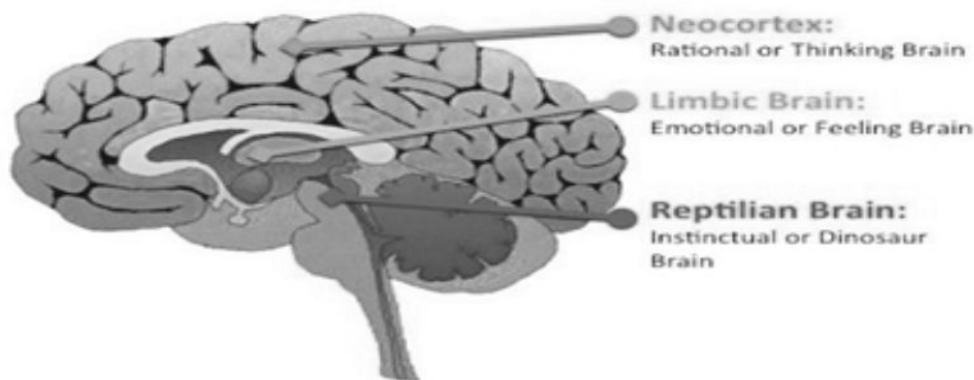
effective because sometimes people are unable to articulate their reasons for preference of certain things, consciously or unconsciously (Vecchiato et al., 2011). On the other hand, Neuromarketing uses a number of neuroscience techniques in order to record the brain's electrical activity and metabolic activity, such as the electroencephalography (EEG), Functional Magnetic Resonance Imaging (fMRI), Transcranial Magnetic Stimulation (TMS), Magnetoencephalography (MEG), Positron Emission Tomography (PET). Beside these techniques, it also uses biometric instruments such as eye-tracking, facial coding which measures the psychophysiological reactivity, and the respiratory rate. Neuromarketing tools provide insights not only what customers are thinking and feeling, but also how they are reacting subconsciously to a specific brand or advertisement. Hence, neuromarketing has become popular to marketers because it provides better information about

how customer make buying decision than the traditional marketing methods (Kenning & Linzmajer, 2011; Morin, 2011; Ariely & Berns, 2010; Pradeep, 2010; Calvert & Thensen, 2004)

Understanding Customer Buying Behavior through Brain Activities

The brain controls all mental and physical processes such as thinking and feeling (Mind disorders, 2014; Macmillan dictionary, 2014). The human brain consists of three layers with specialized functions. The primitive or reptilian brain helps to take quick decision and determine correct or incorrect behaviors. The emotional or the limbic brain is active in emotional aspects of social life like happy, sad, excited, dejected, cool, calm etc. Neo-cortex brain is the rational brain which uses logic to solve problems and allows innovative thinking.

Figure 1. Model of the Human Brain



According to Morin (2011), human's brain activity is mainly irrational because 80% of the buying decisions are made either sub consciously or unconsciously. Therefore, marketers should focus on targeting the emotional brain and then the primitive brain, which will pass on information to the rational brain (Kumar, 2015).

Neuromarketing Techniques

There are different tools frequently used in neuromarketing research to measure the brain activities of customer such as electroencephalography (EEG), functional magnetic resonance imaging (fMRI), magnetoencephalography (MEG), eye-tracking (ET), facial recognition galvanic skin response (GSR), voice pitch analysis (Kotler et al., 2009).

EEG stands for Electroencephalography. Different brain waves related marketing stimuli i.e, advertising are recorded at small intervals up to 10,000 times per second by this technique (Morin, 2011). This techniques is less costly and have greater weight in identifying of emotional responses to different stimuli like branding and advertising (Kline, 2004). The weakness is that it can only measure the blood

flow generated in the superficial layer of the brain cortex not give any information on the sub-cortical activity in the brain (Charron et al., 2008).

Functional magnetic resonance imaging (fMRI) is a tool used to assess how the oxygen level in the brain's blood flow increased. It is also possible to differentiate specific neurons by using this method that influences buying decision (Postma, 2012; Wilson et al., 2008, Camerer et al., 2004). Although it can provide very deep insights about emotional brain, it is very costly compared to EEG (Postma, 2012).

Magnetoencephalography (MEG) is used to measure different neural activities of the human brain. This technique is different from EEG because in MEG research, hypersensitive sensors are used to measure the electromagnetic field without contact with the scalp (Du Plessis, 2011). MEG can provide in-depth information about brain structures but it is very costly compared to EEG (Kenning & Linzmajer, 2010).

Eye tracking (ET) is an old method that is able to measure the focus of consumers' attention; the pattern of visual

behavior by measuring size of the pupils (Nenad, 2011). The main disadvantage is that it is not possible to know which part of attention will create emotion in customer mind (Postma, 2012).

Facial recognition is important in human evolution because facial expressions are external signals of the internal experienced emotions (Britton et al., 2006). This method helps to measure facial muscle movements related to occipitofrontal and orbicularis muscles to check the type of emotions (sadness, happiness, indifference, pain, etc.) (Melillo, 2006). It has many advantages like high spatial resolution, high credibility, analysis of reactions of taste, smell and hearing. One of the disadvantages is that the double meaning of certain expressions may create obstacle for this studies (Harmon-Jones & Beer, 2009).

The galvanic skin response is another technique that measures changes in the electrical resistance of the skin related to the respondent's affective state. It is measured by psycho galvanometer (Malhotra and Dash, 2011). This method is able to identify the certain neural responses which lead certain emotions, such as happiness, sadness, fear, anger, and indifference (Banks et al., 2012).

Voice pitch analysis measures changes in the respondent's voice in emotional reactions such as happiness, sadness, fear, anger. This is measured by audio-adopted computer equipment (Malhotra and Dash, 2011).

Empirical Evidence of Neuromarketing Research on Branding

Brand is a name, term, sign, symbol, design or combinations of them that helps to identify a seller's products or services and distinguish them from that of the competitors (Kotler and Keller, 2012). Brands are ideas in the mind that represent strength from the connections they make. Neuromarketing provides powerful techniques for measuring brand associations (Oksana V. BOSAK). The central point of neuromarketing research is how individual's neural circuits recognizes a preferred brand. "Brands represent consumers' perceptions and feelings about a product and its performance; everything that the product or the service means to consumers. In the final analysis, brands exist in the heads of consumers" (Kotler and Keller, 2012).

McClure et al. (2004) conducted a research, known as Pepsi paradox, on customer preference of choosing two cold drinks brand namely Coke and Pepsi by using fMRI. He used two tests i.e, a blind test and a labeled test to measure the brain activity of individuals. In blind test, most of respondents preferred Pepsi because of taste. However, in labeled test, the respondent's preference label is dramatically changed where 75% preferred Coke and 25% preferred Pepsi because respondents have emotional attachment with brand name coke.

From the fMRI test, it was proved that when respondents knew the brand name, additional areas of the brain were activated the hippocampus, dorsolateral prefrontal cortex and the midbrain. Therefore, company should create a favorable brand image in the mind of target customers. Strong brand image can awaken emotions that change the perception of the product (Bichiş D., 2006).

Empirical Evidence of Neuromarketing Research on Advertisement

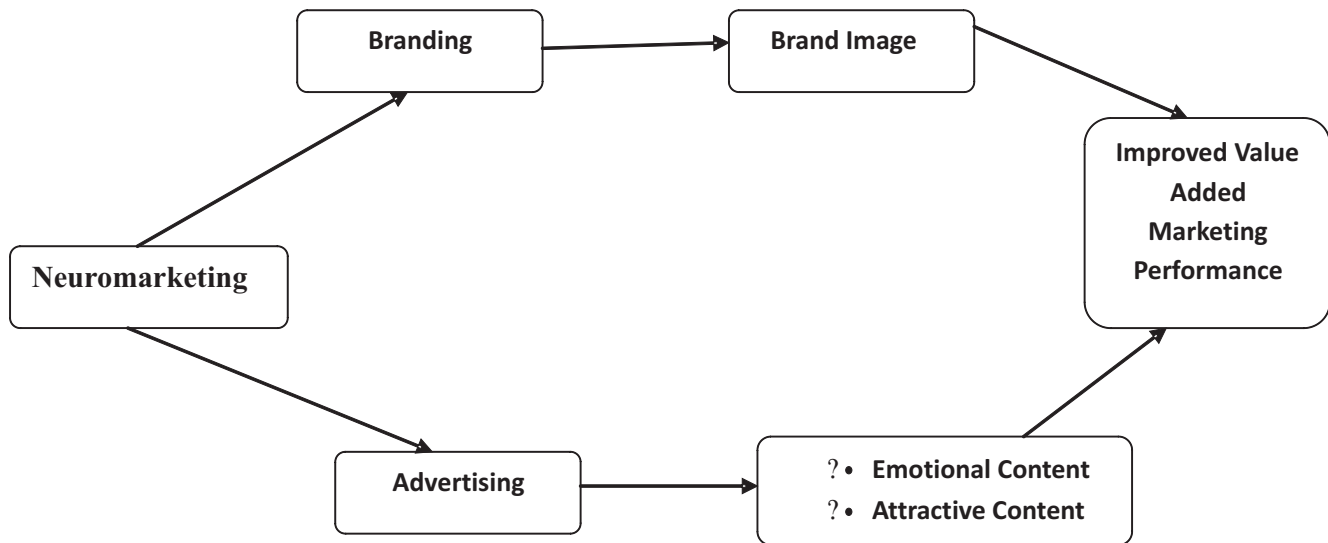
Advertising is one of the essential elements of the communication mix. Every year, billions of dollars are spent for the purpose of advertising in order to influence customer to make purchase decision. But the effectiveness of advertisement is very difficult to measure while neuromarketing tools will be helpful in that case (Ariely and Berns, 2010).

Lindstorm (2008) conducted a research in 2008 and the finding was surprising. The warnings messages like "smoking kills" or "smoking can cause a slow and painful death" and images on cigarette boxes have absolutely no effect on smokers rather it encourages smoking. As a result, billions of dollars wasted for this warning messages. According to the research results, all these warnings and images on cigarette packs stimulate the part of the brain known as the "point of desire". According to Kenning and Linzmajer (2011), if the advertisement is attractive, the desire to buy those advertised items will increase. For example in 2005, market researchers at Campbell conducted a study to assess the customers recall rate of Campbell soup by their advertising efforts, and their influence on the purchase decision of customers. The research finding was surprising to the marketer of Campbell soup. Researchers revealed that the company's advertisements were never really effective in generating sales. Then, the company decided to use Neuromarketing techniques to uncover the factors that influence consumers to buy a soup. During these interviews, it was found that label portraying on the soup did not look warm and the big spoon holding a sample of soup did not provoke any emotional response from them. Finally the company's new label design including bowls of soup would enhance the sale of the soup.

Development of Theoretical Framework

Because of lack of appropriate theoretical models, the present paper suggests a brand-new model based on previous empirical evidence of neuromarketing research related to branding and advertisement that will guide to improved value added marketing performance.

Figure 2. Theoretical Framework for Improving Value Added Marketing Performance



The above brand new model can guide marketers to improve their marketing performance. Marketers need to develop a positive and favorable brand image in customers minds by developing attractive advertisement with emotional content. In neuromarketing research, it's empirically proved that most of the buying decision are made emotionally. Therefore, taking initiatives to create emotional attachment is the prime task of brand marketers to improve marketing performance.

Conclusion and Managerial Implications

Neuromarketing is the novel branch of marketing. The purpose of the study was to know about how neuromarketing helps to design better branding and advertising strategies. There were several insights develop in this research. The most critical insight is that neuromarketing tools namely fMRI, EEG, Eye tracking give insights not only into what that person is feeling and thinking, but also how they're responding to a specific brand or advertising subconsciously. It was also found that neuromarketing tools can recognize specific areas, prefrontal cortex, of the brain activated during specific types of cognitive and emotional processing which lead customer to purchase a particular brand. This information can't be collected through traditional marketing research methods i.e., survey, interview. Therefore, if marketers can use neuromarketing tools in ethically correct way, neuromarketing will give maximum benefits and create a win-win situation for marketers and customers.

Few useful guidelines regarding branding and advertisement are given for the marketers based on the previous neuromarketing studies.

- A good brand image will activate emotional brain which transmits information to the rational brain changing the perception of the brand. Therefore, Marketers should build a strong, favorable and credible brand image in the minds of target customers through cause-related marketing programs, sponsorship etc.
- The package of the product needs to be attractive so that it can generate as much emotion as possible.
- The advertising messages should be short, simple and attractive so that customers can easily understand the messages.
- The emotional content needs to place at the beginning and ending of the advertisement.
- The advertising message must create deep emotions of the receiver which will trigger the emotional brain responsible for the decision-making process and the cognition of rewards.

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