



Application Of Neuromarketing Techniques In Fmcg Products Advertising

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ABSTRACT

Neuro marketing a scientific technique which emerged due to successive failures of traditional marketing research. It has a wider acceptance among the market researchers with respect to FMCG products in the recent years. Neuro marketing techniques makes use of various types of tools to understand the human brain and how mind influences our purchase intentions. This article introduces to the reader about the emerging field of neuro marketing in FMCG advertisements, and then it discusses the various types of tools used in neuro marketing research. It then gives an overview of Implicit Association Test one of the neuro marketing tools in advertising of FMCG products. To come to relevant conclusions it is analyzed how far the neuro marketing tools support the marketing managers in advertising FMCG products.

WHAT IS NEUROMARKETING?

Over the last decade, the emergence of **Neuro marketing** – as in, according to Lee et al (2006) “the field of study that employs methodologies of the neuroscience to understand the customer behavior” – has advanced conventional marketing research, revealing how unconscious responses and emotions impact consumer’s perceptions and decision-making processes. Neuromarketing employs the concepts and techniques of **cognitive neuroscience**—that is, the investigation of the brain mechanisms underlying cognition. By concentrating on the neural substrates of psychological processes and their behavioral expressions, this new field of research seeks to formulate, implement, and evaluate marketing plans and actions. Neuro marketing is based on two postulations: first, that individual sensory and motor systems can be identified in specific networks of brain cells; and second, that observing these networks can reveal the unconscious or emotional

characteristics of consumer decision making that conventional qualitative and quantitative research methods cannot (Mileti, A., Guido, G., & Prete, M. I. 2016). However, neuroscience does not serve only the mere art of selling a product to the right person, but also the one that tries to understand how that person makes his/her purchasing decisions: in the attempt of combining economics, neuroscience, and psychology, **Neuroeconomics** undermines the classical theories according to which buyers would logically evaluate the risk inside the purchase of a product - and thus rationally optimize their utility. Behavioral economics, in fact, suggests that people would not choose their brands or products in a rational manner, but rather they would be driven by emotions in doing that: insights into the mechanisms driving individuals would help to better predict the future of economies. Today, though, the new frontier of **Consumer Neuroscience** (neuroscience applied to consumer

studies, i.e. economics and marketing) would be the application of nanotechnologies to them - namely, **Nanomarketing**. In fact, nanomarketing would raise the bar in neuroscience applied research, "making it possible to: carry out noninvasive and nonintrusive experiments in shopping places; monitor consumers' mental processes in real time; combine various technologies to corroborate the results obtained by different neuroscientific tools; associate neuro physiological field indicators with laboratory neuro imaging results; and highlight ethical issues raised by the use of these novel, portable and easy-to-use nano devices" (Mileti, A., Guido, G., & Prete, M. I. 2016).

NEUROMARKETING TECHNIQUES

To observe changes in brain activity in the presence of packaging, advertising and other communications, neuromarketing utilizes the state-of-the-art technology to observe which areas of the brain 'light up' when test subjects are processing a stimulus (Davis, 2012). Nowadays, with the help of technology, there are various neuroimaging ways that are currently being used in consumer brain research. However, below is an explanation of twelve commonly used methods in neuromarketing research. The neuromarketing methodologies have been categorised into three main groups and these are: Recording metabolic activity in the brain (fMRI and PET), Recording electric activity in the brain (EEG, TMS, MEG and SST) and Without recording brain activity (measuring physiological responses, IAT, EDA/GSR, facial EMG, facial coding and Eye tracking).

RECORDING METABOLIC ACTIVITY IN THE BRAIN

Functional MAGNETIC RESONANCE IMAGING (fMRI)

This is the most common neuro marketing technique. It is a functional neuro imaging process that relies on Magnetic Resonance Imaging (MRI) technology to measure brain activity associated with changes in blood flow. When certain areas of the brain are used,

blood flow to that area area increases. The reason this technique works so well is due to the fact that cerebral blood flow and neuronal activation are coupled. This linkage is possible as active nerve cells carry a great deal of oxygen than inactive brain cells. The brain's response to the need for more oxygen in specific areas of the brain is measurable by blood flow to these areas (Davis, 2012).Information extracted in this way, can assist marketers in ascertaining those areas in the brain which are working at any given time.

POSITRON EMISSION TOPOGRAPHY (PET)

This another method of neuro marketing, in which a battery of detectors surrounds the subject's head and traces radiation pulse, without precisely identifying the location of the signal(Zurawicki, 2010).

RECORDING ELECTRIC ACTIVITY IN THE BRAIN

ELECTROENCEPHALOGRAPHY (EEG)

This is the measurement and recording of electrical activity (brain waves) that happens directly below the scalp, which occurs as a result of neural activity. EEG is used to tell how much of the brain is engaged at a given point in time (Davis, 2012). In the presence of a particular stimulus, such as a piece of advertising, neurons fire and produce a tiny electrical current, which can be amplified. The observed brain waves can be linked to different states of stimulation such as wakefulness (beta waves), relaxation (alpha waves), calmness(theta waves), light and deep sleep (delta waves). Thus, the electrical potential measured and compared to a baseline level can provide a lot of information about a subject's mental state (Zurawicki, 2010).

TRANSCRANIAL MAGNETIC STIMULATION (TMS)

This is a neuromarketing technique that uses magnetic induction in order to modulate the activity of certain brain areas that are located 1-2 centimeters inside, without reaching the neocortex. TMS follows the population neural activity in the brain (Perrachione & Perrachione, 2008). TMS is able to highlight causal inferences by analysing the subject in front of a marketing stimuli while certain brain areas are disabled, stimulated, or normal (Zurawicki, 2010).

MAGNETOENCEPHALOGRAPHY (MEG)

MEG is an electrical technique used in neuromarketing research, it is almost similar to EEG. However,contrary to EEG, magnetometers (detectors) in a helmet are placed on the subject's head to measure magnetic potentials in order to record brain activity at the scalp level (Zurawicki, 2010). Neural processes associated with a particular brand-choice stimulus can be separated into different stages through the observation of MEG responses

(Braeutigan et al, 2001). Brain activity as a function of electrochemical signals between neurons creates a magnetic field that can be amplified and mapped by MEG (Morin, 2011).

STEADY STATE TOPOGRAPHY (SST)

This is a particular usage of EEG technology that uses a sinusoidal, flickering stimulus delivered at the visual periphery. Once the stimulus response is recorded, data is computed to measure short latencies. The primary use of SST has been to examine normal brain function in association to visual vigilance, working memory, long term memory and emotional processes (Tagliazucchi, 2014).

WITHOUT RECORDING BRAIN ACTIVITY

MEASURING PHYSIOLOGICAL RESPONSES

This is a neuromarketing technique in which the researcher monitors the subject's biological reactions to stimuli such as heart rate, blood pressure, facial muscle contractions and skin conductivity among other physiological responses.

EYE TRACKING

This neuromarketing technique that allows researchers to record and study the movement of an individual's eye as they view stimuli. It is normally used as the subject (s) watches TV commercials, reads and views advertisements, observes product packaging and interacts with a web page (Davis, 2012).

FACIAL CODING

This is a neuro marketing method in which the researcher uses a video camera to identify and measure micro-expressions that code non-conscious reactions, based on the activity of the facial muscles. Despite the fact that they are subjective in deciding when an action has occurred or when it meets the minimum requirements for coding, facial expressions are random, they give real time data.

FACIAL ELECTROMYOGRAPHY (FACIAL EMG)

Facial EMG measures and evaluates the physiological properties of facial muscles (Ohme et al, 2011), testing voluntary and involuntary facial muscle movements that reflect conscious and unconscious expressions of emotions (Dinberg et al, 2000; Cacioppo et al, 1986), because each emotion has a particular configuration of facial actions. Facial EMG is usually recorded on both sides of the face (the so-called bipolar manner), using small surface electrodes that record activity from certain muscles playing a major role in the expression of elementary emotions.

ECTODERMAL ACTIVITY (EDA)/GALVANIC SKIN RESPONSE (GSR)

Electrodermal activity (EDA) is the variation of the electrical properties of the skin in response to sweat secretion. It is characterized by the superposition of single distinct skin conductance responses (SCRs).

The idea behind EDA is that skin resistance varies with the state of sweat glands in the skin and, because sweating is controlled by the central nervous system, researchers are able to get an indication of psychological and physiological arousal (Benedeck & Kaembach, 2010).

IMPLICIT ASSOCIATION TEST (IAT)

This is a neuromarketing research method which is used in measuring individual behavior and

experience. Implicit measures might be less biased by deliberate attempts to conceal the attitude and that they might even reflect attitudes of which the respondent is not aware (Houwer & Bruycker, 2007).

What does it measure?	When is it used?
a. Reaction time b. Underlying attitudes or evaluation	a. Brand positioning b. Category segmentation c. Salient packaging features d. Celebrity endorsement – choosing the right option
What are its advantages?	What are its limitations?
a. Allows identifying hierarchies of products b. Draws a more holistic picture of individual behavior and experience	Results apparently depend on the availability of the subject to collaborate, as he or she needs to focus on the task.

NEUROMARKETING IN ADVERTISING FMCG PRODUCTS

The importance of building good customer relationships is more than just developing a good product or pricing strategy. Companies should communicate their value proposition to customer in an effective way (Kotler, 2008). The Promotion Mix is about “the specific mix of advertising, sales promotion public relations, personal selling and direct marketing tools that the company uses to persuasively communicate consumer value and build customer relationships” (Kotler, 2008). It is assumed that specially within communication policy, neuroscience can help to close the existing gap of theory (Pitt, Berthon & Caruana, 2005) in Hubert & Kenning (2008). Through neuroscience it is possible to find answers on the question how advertisements act upon people. When is an advertisement recognized as attractive? As stated before the attractiveness of an advertisement is dependent on the

activation of the rewarding system in the brain (Kenning et al., 2007). Aharon et al. (2001) showed “that beautiful female faces led to the activation of reward-related areas in the brains of heterosexual males”. The key in successful advertisement strategies can be found in a combination of consistency and novelty. Brands try to secure consistency in commercials by using similar key signals or by using a similar structure (Scheier et al., 2010). Using similar codes makes sense as the human being is hardly dependent on specific habits. However it is difficult to communicate new product developments within such limited possibilities. A solution for this issue can be found in addressing same implicit goals. Axe, a deodorant producer, for example addresses same reward stimulus: Being attractive for females. Although commercials are formally different they address the same implicit goal (Scheier et al., 2010). Ambition of communication strategies is reached by offering specific goals a consumer can reach by using a specific product. Successful communication is more complex than thought. Communication strategies can only be successful when customers build an intuitive alliance between product characteristics and implicit goals (Scheier et al., 2010). Imaging a situation in which we enter a super market where every brand is unknown and we just notice the different products. It would be difficult to decide upon the offered chocolate spreads without associating “Nutella” with happiness and family, as presented in different commercials. Communication is all about conveying indirect experiences and expectations (Scheier et al., 2010). A learning effect can not only be reached via direct experiences but can also be reached indirectly. Similar with the principle of conditioning animals, human beings link specific signals with emotions. It is not necessary to get bitten by a Pit Bull to associate that specific dog breed with danger. Reading news can be enough for reproducing fear. Scheier & Held (2013) offered deeper insights about the implicit and explicit systems in the human brain:

1. The implicit system acts to the greatest possible extend unconscious. It is about decisions made via emotions, stereotypes, automatisms and brand associations. The implicit system controls non-verbal communication, learning and storage of unconscious messages.
2. The explicit system critically reflects information, plans the future and drive decisions on a cost-benefit-analysis.

Today it is known, that the implicit system is responsible for the decisions we make. Researcher assume that up to 95 percent of buying-decisions are controlled by implicit signals (Häusel, 2014).

Scheier et al. (2010) differentiate between two forms of reaching attention.

1. Bottom-up: From sense to the brain (packaging)
2. Top-Down: From brain to sensory organ (goals, expectations)

In fact humans are guided top-down. The automatic system in the human brain first asks the questions “What is the product and what can it be used for?” and “Is this rewarding?” Products are recognized as being rewarding.

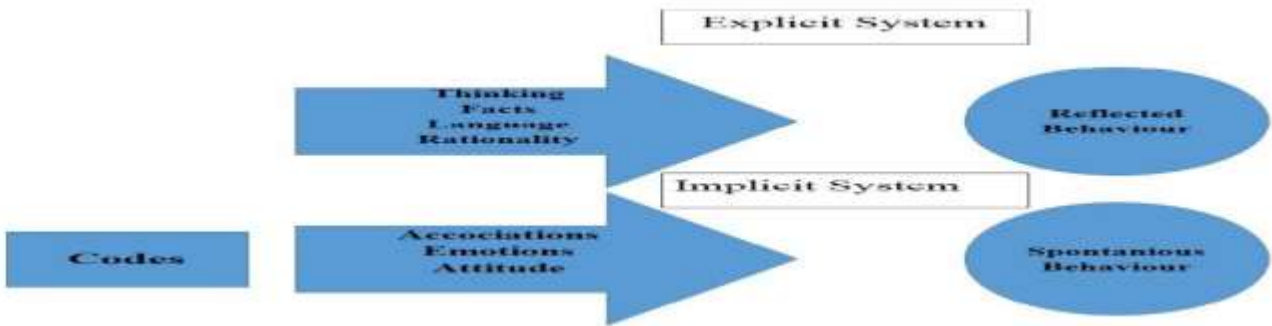


Figure :Explicit and Implicit Systems

CONCLUSION

By making use of neuromarketing techniques the marketers can analyze the consumer perceptions towards advertising of FMCG products especially through the Implicit Association Test. With the help of this test a marketer can get to know where to position his brand while marketing about FMCG products Category segmentation, how these FMCG products should be packed and portrayed in the advertisement so as to grab the attention of the customers and which celebrity should be used to endorse such products. As per the literature review all the techniques including the Implicit Association Test does influence advertising of FMCG Products to a larger extent

REFERENCES:

1. VS Rekha, K Maran (2012), ADVERTISEMENT PRESSURE AND ITS IMPACT ON BODY DISSATISFACTION AND BODY IMAGE PERCEPTION OF WOMEN IN INDIA, Global Media Journal: Indian Edition, Volume.3, Issue 1, 2012
2. KS Sathyanarayana, DK Maran (2011), Job Stress of Employees - International Journal of Management (IJM), Volume 2, Issue 2, PP:93-102.
3. TK MilyVelayudhan, K Maran (2009), A study on Mapping Core Competencies and development of Employees for Excellence with reference to HCL Technologies - Journal Of Contemporary Research In Management, Volume 7, Issue 2, PP:11-23.
4. PP Nandakumar, KM Kaliamoorthy (2009), An empirical study on the burnout of IT professionals employed for middle east countries - Buletinul Universitatii Petrol-Gaze din Ploiesti, Seria, Volume 61, Issue 4, PP:26-35.
5. V Suresh, K Prabhakar, K Santhanalakshmi, K Maran (2016), Applying technology acceptance (TAM) model to determine the factors of acceptance in out-patient information system in private hospital sectors in Chennai city - Journal of Pharmaceutical Sciences and Research, Volume 8, Issue 12, PP:1373.

6. V Suresh, M Chitra, K Maran (2016), A study on factors determining social media on cosmetic products, - Journal of Pharmaceutical Sciences and Research, Volume 8, Issue 1, PP:1.
7. V Suresh, K Maran (2018), A Study On Impact Of An Affiliate Marketing In E-Business For Consumer's Perspective, SP AR - International Journal of Engineering and Technology, Volume 10, Issue 2, PP:471-475.
8. KK Maran, J Badrinarayanan, P Kumar (2017), A study on branded apparels customers purchase behavior with reference to India - International Journal of Applied Business, Volume 21, Issue 15, PP:215-222.
9. S Sankar, K Maran (2013), Market Trading in India-Customer Perception - International Journal of Engineering and Management, Volume 3, Issue 2, PP:1-13.
10. K Maran, V Chandra Shekar (2015), A study on student's perception of employability skills with respect to engineering institutions - International Journal of Research in Engineering, Volume 5, Issue 3, PP:21-34.
11. K Maran, S Usha (2014), Work Life Balance of Women Employees Satisfaction-A Study With Reference to IT Sector in India' - Asia Pacific Journal of Research, Volume: 1.
12. MV Selvakumar, K Maran (2019), ROLE OF E-LEARNING PRACTICES FOR TEACHING FACULTY ON ENHANCING INSTITUTIONAL CLIMATE AT SELF-FINANCE ENGINEERING COLLEGES AT CHENNAI CITY - The Online Journal of Distance Education, Volume 7, Issue 1.
13. Venkatesh.P (2013) "Viral Marketing of Digital Products Using Social Media" PEZZOTTAITE JOURNALS, ISSN: 2319-9016, online ISSN No: 2319-9024, Volume. 2, PP. 120-125.
14. Venkatesh.P (2019) "A Study On Job Satisfaction Of Employees With Reference To Titanium Equipment And Anode Manufacturing Company Ltd." Journal Of The Gujarat Research Society, ISSN: 0374-8588, Volume 21 Issue 17, December 2019, PP: 1569-1581.
15. Venkatesh.P (2020), "A Study And Analysis On Impact Of Brand Equity With Reference To Air India", Studies In Indian Place Name, ISSN: 2394-3114, Vol 40 issue 40 (s1) March 2020, PP: 304