

THE ROLE OF NEUROMARKETING STRATEGIES IN THE CREATION OF BRAND EQUITY: A CONCEPTUAL STUDY

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ABSTRACT: Neuromarketing is the domain of Neuroscience. Brain feedback, stimuli, memory impressions are analyzed to design tools for marketing communication channels like advertising and brand building. It is the newest trends in consumer behavior and helps to dive deep into consumer psychology to understand unconscious state of feelings. Neuromarketing is the emerging field of multidisciplinary domain of science, integrating the concepts and applications from marketing, medical sciences and commerce.

Due to the innovative emerging technologies like Artificial Intelligence coupled with Functional Magnetic Resonance Imaging (fMRI), marketing analysts are developing a practice of contemplating brain's responses to create an improved assessment of consumer's choices. The real time analysis of customer engagement with advertisements, brand messages, observing areas linked to reward, attention, emotional arousal, visual attention of consumers towards advertisement layouts, consumer focus, interests, consumer service interactions provide immense potential for the marketers to understand consumers tastes, preferences and buying behavior.

Through neuromarketing, precise marketing strategies may be designed to reconcile, to modify consumer perceptions. The proposed study is designed to understand the concept of neuromarketing techniques in creation of brand equity adopted by popular market players.

Key words: *Neuromarketing, Brain feedback, fMRI, Brand Equity, consumer perceptions.*

INTRODUCTION

Neuromarketing is the applied science of Neuroscientific techniques to assess, interpret and comprehend human behavior in relation to the consumer markets. Neuromarketing is the intersection of neuroscience and consumer psychology. (Lee Broderick, Chamberlain, 2007; Royo, Vela, and Varga, 2022). The methods like fMRI - Functional Magnetic Resonance Imaging, EEG- Electroencephalography, Positron Emission Tomography (PET) Eye Tracking, Galvanic Skin Response (GSR) or Electrodermal Activity (EDA), Facial Expression Analysis, Functional Near-Infrared Spectroscopy (fNIRS), Heart Rate Monitoring (HRM), Implicit Association Tests (IAT), Transcranial Magnetic Stimulation (TMS) tests are used to evaluate responses linked to marketing stimuli (Plassmann et al. 2012; Vecchiato et al 2011; Alvino et al. 2019; Bercea 2013; Russo et al. 2015).

Jerry Zaltman Metaphor Elicitation Technique established correlation between consumers brain activity and marketing information in the patented fMRI scans of consumer brains in the year 1999 (Zaltman and Coulter,1995;Zaltman. G, 1997).

Functional Magnetic Functional Imaging – fMRI, Electroencephalography – EEG and Magnetoencephalography - MEG are highly useful, safe to measure and assess brain activities. Further it is noticed that consumer behavior is essentially influenced by verbal messages or images or videos with rationally designed colour shades and audio clippings (Morin, 2011; Daugherty and Hoffman, 2017).

Morin. C, 2011 further noticed that only 20% of the human brain is active and individual's preliminary buying decisions are influenced by R - Complex or Reptilian brain. This part of the brain is non-verbal and doesn't process complex information, the reason why consumers are more drawn to visuals and

advertisements. Hence it is inferred that images resonate more strongly with consumers than words do (Adam .M. Zemelka, 2018; Robert K. Naumann, et.al, 2015; Leon Zurawicki, 2010; Leon Zurawicki, 2010; Lerner, J. S., & Keltner, D -2000).

During previous two decades marketing researchers and professionals have witnessed the emergence of Consumer Neuro Science (CNS) as an abstract concept of Cognitive human psychology and consumption of consumer durables. The application of CNS emerged as Neuromarketing – an enquiry of various emotional triggers associated with consumer behavior (Oliveira et.al 2022; Karmakar and Plassman 2019; Cherubino et.al 2019; Harris et.al 2018; Kenning, 2008).

Neuromarketing is the science of mapping responsiveness of the brain to that of marketing strategies (Lee.et.al 2007, Krajnovic et.al 2012). Consumer's willingness to connect to the brand largely depends on logical reasoning for human emotions. Neuromarketing techniques provide rational base to quantify both human emotions and the factors of logical reasoning (Bagozzi, R. P., Gopinath, M., & Nyer, P. U. (1999); Ariely, D., & Berns, G. S. 2010; Hasson, U., & Sprecher, E. (2011); Plassmann, H., Ramsoy, T. Z., & Milosavljevic, M. 2012).

The marketing environment is currently experiencing rapid phase of transformation due to the emergence of competitive and complex decision models (Florack, Egger, Hubner, 2019). The earlier marketing literature supports segmentation, identifying the target market and the product positioning as the elements for formulating marketing strategies (Desarbo, Blanchard, 2009). Identifying customers with homogeneous set of behavioral patterns, product preferences and consumption patterns under the conditions of uncertainties is the challenge to be dealt with technological smart applications (Wedel. M & Kamakura, 2000; Xu, R & Wunsch. D, 2005; Kumar V, 2018).

In response to the societal, economic and technological transformation a detailed classification of developments in marketing are classified as, period of discovery 1900-1910, Period of conceptualization 1910-1920, Period of integration 1920-1930, Period of development 1930-1940, Period of reappraisal 1940-1950, Period of re-conception 1950-1960, period of differentiation 1960-1970, period of socialization 1970-1990, period of relationship marketing 1990-2000, period of digital marketing 2000-2010, period of social media marketing 2010 and onwards (Borden N.H 1964;Bartels 1976, Lemon, K. Net.al, 2016; Kumar, V.et.al., 2022).

The marketing professionals are encircled by the challenges of increasing sales, revenue, customer life time value (CLV) and brand asset value (BAV). The decision makers are seeking for innovative means for discovering and processing customer's information and segmentation strategies. Further these strategies are assessed to quantify the monetary value of marketing information. (Berger P.D et.al, 1998; Venkatesan R & Kumar V, 2004; Glanz, 2020; Mammadova & Alasgorov, 2020; Kabasakal, 2020). The derived benefits are in the form of brand extensions, competitive marketing strategies, consumers brand response and Consumer Based Brand Equity as the outcome (Michael C. Peasley 2014).

In customer data analytics RFM (Recency, Frequency and Monetary Value) is the new normal of segmentation possess higher order of economic significance (Kotler & Keller, 2016; Gustriansyah, Suhandi & Antony, 2020; Rahman, 2020; Jayakumar & Sumathi, 2020).

The incredible developments in artificial intelligence coupled with neuroscience, made marketing researchers to develop marketing strategies keeping intact the pleasant feel to the customers. The outcome is a bunch of innovative techniques, to read, to manipulate minds of the consumers (Morin, 2011; Dooley.R, 2016). The present study is an attempt to understand the neuromarketing strategies in creation of brand equity keeping in mind the psychological consumer behaviour.

LITERATURE REVIEW

Robin A. Coulter et.al (2001) presented the applications of Zaltman Metphor Elicitation Technique (ZMET) to interpret the consumer perceptions of adevertising. The objective of the study was to understand consumers impressions of advertising and the meanings they are associated with.Advertising is recognised as the most visible component of marketing mix. ZMET grounds the fact that pictures or images can be used as drivers of stimuli,which generate non-verbal communication between the product and the consumer.Further ZMET is a qualitative reasearch approach, primariily used in marketing to unraval mysteries of deep often unconscious consumer thoghts and emotions. It is demonstrated that when participants select or react to

images that they feel represent an ad or brand, these images allow researchers to explore the symbolic, often unconscious, communication between the ad and the consumer.

The chosen images help interpret consumer reactions to the ad's visual and emotional appeal, providing insights into the types of messages and imagery that may strengthen or weaken consumer engagement. The research envisages that ZMET is a comprehensive framework for interpreting consumer perceptions of advertising by focusing on non-verbal, image-driven stimuli. By uncovering these hidden meanings, ZMET enhances advertisers' ability to create ads that not only capture attention but also foster stronger, more emotionally engaging connections between consumers and brands.

José Chavaglia Neto et al. (2011) argue that neuromarketing plays a significant role in influencing human irrational behaviour, which is closely linked to consumer brain research. Their study explores how neuromarketing integrates various theoretical models of decision-making, drawing from fields such as Economics, Quantitative Methods, Psychology, Biology, and Pharmacology. The research concludes that neuromarketing creates an anchoring effect in consumers' minds, influencing not only their current purchasing decisions but also shaping their future buying behaviours for the same product.

Harit Kumar et al. (2015) highlight neuromarketing as a growing area of marketing research, particularly impacting key marketing domains like brand management and advertising. In 2009, Hyundai Motors utilized EEG testing to better understand consumer buying behaviour, finding that the car's exterior design evoked greater pleasure and appeal among potential buyers. Similarly, in 2008, the American potato chip brand Frito Lay employed neuromarketing techniques and discovered that the shiny, bright-coloured packaging of their chips activated the anterior cingulate cortex, a brain region linked to feelings of guilt. In contrast, when they tested a new matte beige packaging design featuring images of potatoes and other healthy ingredients, this brain activity was not triggered. As a result, Frito Lay switched to the matte packaging to better align with consumer perceptions of healthfulness.

Dr. Ritty Francis ,et.all (2016) indicates that neuromarketing has extensive applications across a variety of sectors, including consumer goods, cosmetics, FMCG, and hospitality. Its impact extends beyond product-based industries to inform the design of advertising materials, websites, and e-commerce platforms. Neuromarketing's value is particularly evident in evaluating how consumers perceive new products. By considering multiple sensory elements—such as taste, texture, smell, and appearance—neuromarketing offers insights into how these stimuli shape consumer reactions and preferences.

The study finds that neuromarketing integrates neuroscience into marketing research, offering a deeper understanding of consumer behaviour. While traditional methods such as surveys and interviews reveal explicit preferences, neuromarketing uncovers the subconscious drivers of consumer decisions, giving companies a competitive edge in crafting marketing strategies that resonate on an emotional level.

The study by **Ruxandra Badescu et al. (2019)** provides valuable insights into consumer perceptions of neuromarketing, with a particular focus on the ethical implications of eye-tracking technology. By concentrating on eye-tracking experiments, the authors explore how observing consumers' gaze, facial expressions, gestures, and tone of responses can inform brands about consumers' preferences and willingness to associate with a brand. This approach is particularly significant in understanding how brands can build more authentic connections by gauging genuine consumer responses rather than relying solely on self-reported data.

The study presents a compelling argument that eye-tracking technology can reveal insights about consumer engagement and attention patterns. This data can then be applied to assess how effectively brand communication resonates with consumers. The ability to capture such nuanced data provides brands with an opportunity to refine their messaging, visuals, and positioning to align with consumer expectations and preferences more closely.

Additionally, Badescu et al. highlight that eye-tracking experiments can contribute to ethical neuromarketing by helping companies understand consumer desires and expectations without invasive data collection. By focusing on natural, observable indicators, eye-tracking may offer a non-intrusive way to understand consumer reactions, potentially addressing some privacy concerns often associated with neuromarketing.

The study supports eye-tracking as a valuable tool for deepening brand communication strategies and creating a more consumer-aligned marketing approach. The authors advocate that eye-tracking can be instrumental in helping brands assess not only the effectiveness of their messaging but also the ethical considerations of neuromarketing, suggesting a balance between innovation and consumer respect.

The study by **Mashaal Aldayel et al. (2020)** provides a balanced examination of the limitations and merits of traditional marketing methodologies versus neuromarketing approaches. This research highlights the credibility that neuromarketing, since its inception in 2002, has garnered among marketing and advertising professionals. The authors critique traditional methods, such as consumer surveys, which, while useful, are susceptible to biases as they often rely on self-reported data that may not fully capture subconscious reactions or true consumer preferences.

In contrast, neuromarketing methodologies, especially EEG (electroencephalogram)-based assessments, offer a more objective approach by measuring real-time brain cell activity in response to stimuli. EEG and related Brain-Computer Interface (BCI) systems allow researchers to gather nuanced, authentic data regarding consumers' cognitive and emotional responses to various advertising elements, including both verbal and nonverbal cues.

The study effectively emphasizes the role of different neuromarketing tools, such as eye-tracking, galvanic skin response, and facial coding, which provide additional layers of insight into consumer behavior. These tools help capture micro-expressions and physiological responses that often occur subconsciously, thereby enhancing the depth and reliability of data collected compared to traditional methods.

The classification of brain activity frequencies—Gamma (22-30Hz), Beta (13-22Hz), Alpha (8-13Hz), Theta (4-8Hz), and Delta (<4Hz)—is insightful. This detail underscores how higher-frequency activities like Gamma and Beta oscillations correlate with a consumer's willingness to pay and positive responses to advertising. This finding strengthens the study's position that neuromarketing can better predict consumer intent and drive favourable outcomes by tapping into neural responses that conventional methods may overlook.

Overall, this research advocates for a complementary approach, suggesting that combining neuromarketing with traditional techniques could enrich consumer insights

Sarah Kari.et.al (2020) analysed Neuro-Marketing and its effect on Consumer Behaviour and Brand Perception. The synthesis of two logical and complex orders consumer behaviour and neuroscience replaces traditional approach to marketing research with that of neuromarketing. The research study examines consumer behaviour pertaining to the fashion industry at large and how colours and imagery affect the human mind. It is observed that Gen Z consumers are increasingly looking for an emotional and social connection with the brand. The consumers of Levi, Allen Solly and Van Heusen's prefer the textile products with colour shades of Red, Black and Green.

Niknik Ahmad Munawar.et.al (2021) highlighted the significance of Customer Life time Value in creating Brand Equity. Companies are increasingly focused on creating strategic guidelines that link the marketing mix, Customer Lifetime Value (CLV), and brand equity. Customer lifetime value (CLV) is particularly important, as it represents the total financial value a customer brings to a company over their relationship duration.

It is further identified that Brand Equity is the major derminant of customer life time value. A strong brand can enhance CLV by fostering deeper customer engagement and retention, which ultimately contributes to sustained revenue.

The study finds that by integrating customer life time value and marketing strategies companies can optimize the marketing mix to enhance brand equity, maximize CLV, and, in turn, increase overall profitability. Such kind of strategic approaches ensures that, marketing efforts align with both immediate and future revenue goals, establishing a sustainable foundation for long-term growth.

Ashok Kumar Parsoya (2023) highlighted neuromarketing as an emerging area in marketing research. The study emphasizes that neuromarketing is a technique for assessing consumer thoughts and

reactions to various elements such as advertisements, packaging, pricing, product design, and quality. By documenting brain responses, marketers can gather valuable insights to enhance product development, design, and marketing strategies. Neuromarketing is a branch of neuroscience focused on understanding consumer behaviour through cognitive processes, shedding light on preferences, motivations and expectations while predicting future actions. This field utilizes tools like eye-tracking, facial coding, pupillometry, biometrics, electroencephalography, functional magnetic resonance imaging, and skin conductance response to forecast consumer behaviour. These methods are applicable in sectors like automobiles, textiles, consumer electronics, banking, healthcare, telecommunications, and insurance.

CONCLUSION

The present conceptual study endeavouring to consumer behaviour through the application of neuroscience as a marketing management tool. The observations demonstrate that the integration of neuroscientific techniques with traditional marketing practices can produce richer and more objective data, as conventional market research often fails to capture unconscious drivers of consumer decision-making. Neuromarketing therefore holds considerable potential for enhancing marketing management, particularly in the development of strong brand associations and more effective marketing mix strategies for new product and service introductions.

By investigating brain activity and psychophysiological responses, neuromarketing offers deeper insights into consumer preferences, reactions to product features and advertisements, and purchasing decisions. Although the scientific procedures are complex, their ability to reveal consumers' subconscious motivations makes them an important complement rather than a substitute to existing research methodologies. It is not a tool for identifying a definitive "buy button" in the consumer's mind, but rather a means of improving the accuracy and relevance of marketing decisions.

Despite these benefits, neuromarketing continues to face criticism, particularly regarding ethical concerns that limit its full adoption in commercial settings. Evidence suggests that most ethical issues arise from business practices rather than academic research. Therefore, developing a universal code of ethics focused on commercial applications could help mitigate stakeholder concerns and encourage responsible implementation. Strengthening ethical guidelines may ultimately support wider acceptance of neuromarketing and allow marketers to leverage its capabilities more confidently and effectively.

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