

NAVIGATING THE INTERSECTION NEURO-MARKETING AND CONSUMER BEHAVIOR ANALYSIS: LEVERAGING INSIGHTS FOR EFFECTIVE CAMPAIGNS

Ari Kristiana *¹

Universitas Muhadi Setiabudi, Indonesia
kristianaari12@yahoo.co.id

Melyana Ratana Pugu

Universitas Cenderawasih Papua, Indonesia
puguratana@yahoo.com

Deswita

STKIP Kusuma Negara Jakarta, Indonesia
ita.lubban@gmail.com

Abstract

In addition to providing new tools, neuromarketing ushers in a new era of consumer behavior research. These discoveries have turned marketing from a guessing game into an art with strong neuroscientific foundations. Understanding the complexities of the consumer mind is made easier with the creative and powerful approach of neuromarketing. This innovative method paints a vivid picture of the feelings and ideas that influence consumers' choices. This inspires us to embrace the marketing of the future, in which data and intuition work together to provide more insightful understandings of customer behavior and, consequently, more successful marketing campaigns. The research was carried out using the literature study method. This research discusses the meaning of neuro-marketing, basic principles and techniques of neuro-marketing, understanding and factors that influence consumer behavior, methods of analyzing consumer behavior, neuro-scientific approaches in understanding consumer behavior, and integration of techniques, neuro-marketing with consumer behavior analysis.

Keywords: Neuro-marketing, consumer behavior analysis, effective campaigns

INTRODUCTION

Understanding customer behavior is essential in the quickly changing corporate environment of today. One cutting-edge strategy that has surfaced is neuro-marketing. This cutting-edge discipline integrates marketing,

¹ Correspondence author

psychology, and neuroscience to fully comprehend the decision-making process of customers.

Abdigali et al (2023) in their research stated that Neuro-marketing is a research field that combines neuroscience with marketing to understand how the human brain responds to and influences purchasing decisions and consumer behavior. The main goal of neuromarketing is to understand the cognitive and emotional processes that occur in the minds of customers to optimize marketing strategies.

Technological advancements have the power to shift the offline to online market structure. Researchers are becoming increasingly interested in the development of wearable sensor technology. According to Ramsay (2019), neuromarketing, gaming, computers, entertainment, psychology, and education can all benefit from the use of emotional recognition.

Neuromarketing is a multidisciplinary field that integrates psychology, neurology, and marketing science. Utilizing brain imaging, scanning, or brain activity monitoring technologies, neuromarketing assesses how a subject reacts to a specific product, package, advertisement, or marketing component. A novel and quickly expanding method in consumer research is called consumer neuroscience (Sousa, 2017). The study of the neuropsychological processes that underpin and direct customers' behavior and decision-making is the aim of consumer neuroscience.

Numerous start-up businesses have made neuromarketing their primary offering. Among the businesses is the American advertising firm Brighthouse, which pioneered neuromarketing in 2002. The Nielsen Company purchased American neuromarketing startup NeuroFocus in 2008, transforming it into Nielsen Consumer Neuroscience. Several well-known companies, including BBC, Coca-Cola, Ford, Heinz, Intel, and L'Ore, are mentioned by the Neurosense firm, which performs the fMRI method for commercial usage (Bradlow et al, 2017).

Eye tracking, electroencephalography (EEG), functional magnetic resonance imaging (fMRI), facial expressions, and magnetoencephalography (MEG) are a few techniques for assessing consumer decision-making and behavior. Measuring physiological responses and brain activity has the advantage of shortening experiment duration and expense while connecting neural processes to cognitive and affective domains. A study by M. Caratu (2019) seeks to further this topic by offering more references on the critical importance of neuromarketing in assessing customer behavior and decision-making.

Combining the terms "neuro" and "marketing" suggests combining two academic disciplines: marketing and neuroscience. This approach uses brain imaging to measure responses in order to anticipate the efficacy of advertising campaigns without relying on consumer claims. Advertising firms like Neurosense, SalesBrain, and Brighthouse are beginning to forecast the efficacy of brain use using face expressions, eye tracking, EEG, and Galvanic Skin Response (GSR) data. This approach makes it possible to monitor how closely shoppers pay attention to shelves, as well as what they like and are afraid of.

This study revealed that a novel method for conducting market research is neuromarketing. Numerous businesses, including the BBC, Coca-Cola, Ford, Heinz, L'Oreal, and Yahoo, have employed neuromarketing as a method of doing market research. Numerous strategies have been developed by service firms like NeuroFocus, Neurosense, and Brighthouse through the use of neuroscience. EEG, eye tracking, GSR, and cognitive analysis are the methods. As a result, marketers should look forward to a bright future with neuromarketing (R Makori, 2023).

In the end, this study shows that neuromarketing uses brain imaging to measure responses in order to forecast the efficacy of advertising campaigns. Numerous factors can be used to study consumer behavior, including excitement, age, gender, socioeconomic status, and cognitive abilities. These factors can all have a significant impact on how consumers make decisions. fMRI, eye tracking, EEG, facial expressions, GSR, and other methods can be used to measure neuromarketing. These are all promising methods that can assist researchers in determining the behavior of consumers.

RESEARCH METHOD

The approach used in this study is literature study, which is a technique for gathering data that involves comprehending and examining theories from a variety of relevant literature. Preparing the required tools, creating a working bibliography, scheduling time, and reading or recording research materials are the four steps of library study in research. The process of gathering data for this study involves looking for and creating sources from a variety of sources, such as books, journals, and previously completed research. To bolster the claims and concepts, library materials gathered from a variety of references are critically examined and need to be thoroughly explored. Conducted by analysis of related journals and searchable by keywords navigating the intersection of neuro-marketing and consumer behavior analysis: leveraging insights for effective campaigns.

RESULT AND DISCUSSION

Neuro-marketing concept

Neuromarketing or neuromarketing is related to neuroscience. Neuro marketing according to Jayavardhan & Rajan (2023) is also a study of how our nervous system develops, what it does and how it is structured. Neuroscientists tend to focus on the brain and its impact on behavior and cognitive function. This is the basis for why neuromarketing can be useful in marketing strategies. Simply put, neuromarketing is designing marketing materials. One example is creating a website for marketing, advertising, content and email campaigns. All of these elements are also included in neuromarketing. The design of these neuromarketing materials is capable of evoking certain neurological reactions. The goal is to trigger a response or emotion related to the sale or purchase.

Neuromarketing is also an understanding of marketing understanding stimuli that can influence buyer decisions and brain activity. Neuromarketing itself first appeared in 2001. At the beginning of its appearance, neuromarketing sparked controversy in several circles. Even so, currently neuromarketing has been accepted and proven to be able to increase marketing effectiveness (Kumar & Singh, 2015).

In principle, neuromarketing is a way of promoting a product and service with the concept of influencing customers without them realizing it. Where this is done through appropriate visual design of promotional media. So that without realizing it, customers are interested in trying these products and services. The goal of neuromarketing is to build long-term relationships with customers through knowledge, time, and extensive research. On the other hand, the application of neuromarketing can also provide opportunities for businesses to not only build customer loyalty, but also build authority. So, it is not surprising that many companies are now choosing to use neuromarketing data analysis to exploit the behavior of their target audience or potential customers (A Naim, 2015).

By applying neuromarketing principles, businesses can increase customer value and drive better results. The following are the principles of neuromarketing according to research by Shahriari et al (2020), namely:

1. Use Surprise and Novelty

The brain likes new and unexpected things. Include elements of surprise and novelty in marketing campaigns to attract attention and create a lasting impression.

2. Emphasize Emotions

Emotions play an important role in purchasing decisions. Frame marketing messages around strong emotions such as excitement, curiosity or FOMO (fear of missing out).

3. Create a Sensory Bond

Take advantage of all the senses to create a more memorable experience. Use eye-catching images, catchy music, and shareable content to engage customers emotionally.

4. Use Color Strategically

Colors have a strong influence on emotions and behavior. Use colors that suit your brand and evoke the desired reaction from customers.

5. Optimize Design for Cognitive

Website design and marketing materials must take into account how the brain works. Use easy-to-read fonts, sufficient white space, and a logical information structure.

6. Personalize the Experience

The brain responds better to personalized messages. Collect customer data to customize offers, product recommendations and other marketing experiences.

7. Leverage Social Proof

The brain tends to trust other people. Leverage social proof like reviews, testimonials, and recommendations to build trust and persuade customers.

8. Make Story Connections

Compelling stories engage the brain and create an emotional connection with the brand. Craft marketing messages around narratives that are meaningful and relevant to your target customers.

9. Include a Clear Call to Action

The brain needs to know what to do next. Include clear and easy calls to action in all marketing campaigns to encourage the desired response.

10. Test and Repeat

Neuromarketing is an iterative process. Test different strategies, collect data, and iterate on your campaigns to optimize results and increase customer value continuously.

By applying these neuromarketing principles, businesses can create more impactful customer experiences, build stronger relationships, and drive higher customer value (Kumar & Brar, 2020).

Neuromarketing utilizes a variety of advanced tools and techniques to understand how consumers' brains react to marketing stimuli. Here are some

of the main tools used in neuromarketing and how they work according to Srivastava & Bag (2024) research:

1. fMRI (functional Magnetic Resonance Imaging)

How It Works: fMRI is a brain imaging technology that allows researchers to visualize brain activity in real time. Using strong magnetic fields, fMRI measures changes in blood flow in different parts of the brain in response to certain stimuli.

Applications: fMRI is often used to determine which parts of the brain are active when consumers see advertisements, hear music, or even feel certain sensations. This provides insight into the parts of the brain involved in the purchasing decision process.

2. EEG (Electroencephalography)

How it Works: EEG measures electrical activity on the surface of the scalp caused by the activity of neurons in the brain. By placing electrodes on the head, EEG can detect changes in brain activity patterns.

Applications: EEG is often used to understand consumers' emotional responses to marketing stimuli. This can help marketers determine whether a particular advertisement or product evokes a positive or negative reaction in the consumer's brain.

3. Eye Tracking

How it Works: Eye tracking technology uses a special camera to track a person's eye movements and focus points as they look at a screen or object.

Applications: Eye tracking is often used in advertising research to determine which elements of an advertisement attract consumers' attention. It can also help in website design or store layout, by showing where consumers' eyes are likely to land.

4. Facial Electromyography (fEMG) and Galvanic Skin Response (GSR)

How it Works: fEMG measures facial muscle activity to determine a person's emotional expression, while GSR measures skin conductivity which changes with changes in emotion.

Application: Both techniques are used to measure consumers' emotional reactions to marketing stimuli. For example, if consumers show signs of surprise or excitement when viewing an ad, this can tell marketers that the ad is effective in appealing to consumers' emotions.

By understanding how these tools and techniques work, as well as how they can be used to understand consumers' brain reactions, companies can

make more informed marketing decisions and create more impactful campaigns (Frederick, 2022).

Consumer Behavior Analysis

Before understanding the stages of consumer behavior analysis, you must know what consumer behavior analysis is first. This analysis does not lead to knowing who and how many consumers shop in stores or apps. However, this analysis will lead to getting to know potential customers more precisely and carefully (Juster, 2015). We will find out the character and way consumers think until they finally make a product transaction. In fact, by implementing a customer behavior analysis strategy, we will also see various reasons why consumers want to buy company products. This information is certainly very useful because it will help us in creating marketing campaigns and quality products in the future (Roma et al, 2017).

There are several factors that influence consumer research on this behavior. According to Sigurdsson et al (2015), this factor is influenced by the following things.

1. **Personality Traits**

Every consumer has a different character. These differences are sometimes influenced by background, upbringing and personality. However, you can analyze and identify these personality factors further. Because, this will tell you about their character which can later be used as a reference in developing appropriate products and content marketing. Products and content will be more personal!

2. **Psychological Response**

Another factor that influences consumer analysis can also occur from their psychological responses. For example, if one day you encounter consumers who suddenly drop a product, they will respond in different ways. There are those who really feel guilty, apologize, or are just plain guilty, then replace the product.

3. **Social Trends**

Trends that occur in the social environment also have a big influence on the sustainability of customer analysis that companies carry out. This is because what the audience hears, such as recommendations from friends or other reviews, can influence transaction decisions.

The following are the steps for analyzing consumer behavior using a special model according to Peighambari et al (2016), namely:

1. Learning models

This model is often used by large companies in analyzing their consumers. Learning models refer to customer behavior theory which shows customers' desires to fulfill their basic needs. Learning models will also tell you about how consumers prioritize their need to learn that arises from life experiences, such as fear or guilt.

2. Psychoanalytic Model

This model is taken from Sigmund Freud's theory of psychoanalysis which will help you see the true motives behind consumer transactions. Usually, consumer transaction motives are based on hidden, suppressed desires and personal needs.

3. Sociological Model

Sociological model is a model of consumer behavior analysis that is influenced by the social environment, such as the neighborhood, society and other groups. According to research by Schiffman and Kanuk (2019), social factors such as the environment consumers live in and the responses of their relatives can influence transaction decisions.

4. Output, Input, and Process

The next model that you can use to analyze consumers is the output, input and processes carried out by the company and consumers.

This model is a collaboration of the implementation of the 4P marketing strategy in the company and indicators that refer to consumer responses to the products or services provided by the company.

5. Black box model

Then, the black box model is a consumer behavior analysis model that will show you that consumers are thinking and selective individuals. Every thing he thinks and receives from other people can influence their transaction process.

The Intersection Between Neuro-marketing and Consumer Behavior Analysis

Neuroscience generally means the science of the brain. Neuroscience is human behavior from the perspective of the activities that occur in the brain. Neuroscience is moving to influence people to buy. Apart from that, Neuroscience can also be used for branding strategies as we know that branding contributes to creating sales.

Neuromarketing is a field of study that combines neuroscience with marketing to understand consumer behavior more deeply (Mouammine & Azdimousa, 2021). By analyzing the brain's response to marketing stimuli, neuromarketing can provide better insight into consumer preferences and decisions. Neuromarketing has become a useful tool in understanding consumer preferences in various sectors in Indonesia. Here are some areas where neuromarketing is applied:

1. Digital Marketing

In a world increasingly dominated by digital platforms, neuromarketing helps companies understand how consumers respond to online advertising, website design and social media content. By analyzing neuroscience data, digital marketing strategies can be adjusted to more effectively capture the attention of target markets.

2. Food and Beverage Industry

In the food and beverage sector, neuromarketing is used to understand taste preferences and the most attractive packaging appearance of consumers. Brain analysis helps in optimizing packaging design and product promotion to be more effective in achieving marketing goals.

3. Television and Radio Advertising

In traditional advertising contexts such as television and radio, neuromarketing helps assess the extent to which advertising can achieve the desired emotional effect. A deeper understanding of brain responses guides companies to create ads that more captivate and move audiences.

4. Retail Shopping

In the retail environment, neuromarketing helps stores and brands understand consumer behavior patterns in physical stores. Brain response analysis helps in placing products strategically and creates a more engaging shopping experience.

5. Market Research

In market research, neuromarketing adds a new dimension by providing a deeper understanding of consumer decisions. This can help companies adapt their marketing strategies more effectively according to the needs and preferences of the target market.

While providing valuable insights, neuromarketing also raises several ethical challenges and questions. Some critics worry about consumer privacy and the potential for misuse of neuroscience data. Therefore, it is important for neuromarketing practitioners to adhere to strict ethical standards and engage

consumers with transparency in the collection and use of their data (Toma et al, 2023).

Neuromarketing brings new light in understanding consumer behavior by involving neuroscience and advanced technology. In Indonesia, the application of neuromarketing can be found in various sectors, from digital marketing to the food and beverage industry. Even though it provides significant benefits, it is necessary to remember to overcome challenges and maintain ethics so that the use of this technology remains in line with consumer interests (Luna-Nevarez, 2021).

In the marketing environment, neuromarketing techniques and technologies have emerged as a potential new field that represents a radical departure from conventional tactics. Utilizing cutting-edge technology like fMRI, EEG, and eye tracking, neuromarketing captures customer reactions and brain responses in addition to behavioral observations and self-reported survey data. Neuromarketing is an exciting and forward-thinking field that enables marketers to map the emotional landscape and unearth the mysterious relationships between cognitive processes and purchase behavior (Khurana et al, 2021). For instance, fMRI can reveal which brain regions light up in reaction to specific commercials or goods, offering previously unheard-of insight into what draws in customers and what repels or indifferentizes them.

In addition to providing new tools, neuromarketing ushers in a new era of consumer behavior research. These discoveries have turned marketing from a guessing game into an art with strong neuroscientific foundations. It is upbeat and empowering, heralding a day when consumers will be able to enjoy goods and services that are specifically catered to their wants and tastes and marketers will be able to craft more powerful and memorable advertising. By adopting cutting-edge methods, it opens the door to a more effective, individualized, and compassionate marketplace.

Advertisers that want to know how customers subconsciously respond to their commercials can benefit from neuromarketing. This can assist in determining which elements of an advertisement draw in viewers, arouse feelings, or influence a purchase. Advertisers can create more compelling advertisements that connect with their target audience more effectively by knowing these insights.

Constantly rising sales and revenue figures demonstrate how remarkable and revolutionary this market expansion is. Recent reports claim that the neuromarketing industry has undergone a seismic change, growing its market share at a rapid rate and influencing a future in which understanding

customer behavior will not be confined to surveys and educated guesses. Neuroimaging technology's rising accessibility and affordability have opened up a field that was previously dominated by large corporations to smaller players. This has encouraged a culture of innovation and a diversified sense of rivalry, stoking the flames of advancement and guaranteeing that the advantages of neuromarketing continue to grow (Januar et al, 2021).

The dynamics of the industry have been significantly altered by these shifts, creating an optimistic environment in which businesses of all sizes can take advantage of numerous development prospects. Neuromarketing, with its promise of a profound scientific comprehension of customer behavior, is fast becoming a need in business. One thing is certain as we look to the future: neuromarketing is a bright new world of consumer knowledge that is here to stay, not just a fad. Businesses now have the ability to forecast customer behavior thanks to neuromarketing. Businesses can forecast how customers will react to changes in their products or marketing tactics by studying how the brain processes and responds to different inputs. This can lessen the possibility of costly errors and assist them in making better-informed decisions (A Gorgiev, 2020).

CONCLUSION

Neuromarketing is more than simply a fad or fashionable term. Understanding the complexities of the consumer mind is made easier with the creative and powerful approach of neuromarketing. This fascinating discipline is bringing in a new era of marketing by utilizing state-of-the-art neuroscience, which promises a more nuanced and successful marketing strategy along with a deeper understanding of consumer behavior. Fundamentally, neuromarketing is an ode to the human drive for creativity and constant knowledge advancement. Based on these figures, mapping consumer reactions with cutting-edge technologies like electroencephalography (EEG) and fMRI scanning is akin to venturing into new mental region.

This innovative method paints a vivid picture of the feelings and ideas that influence consumers' choices. This inspires us to embrace the marketing of the future, in which data and intuition work together to provide more insightful understandings of customer behavior and, consequently, more successful marketing campaigns.

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