

# Neuromarketing: Unleashing Its Potential And Navigating The Ethical Challenges In Marketing Research

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## ARTICLE INFO

## ABSTRACT

Since one of the most significant issues in today's market is what influences consumers to choose one product over another, there is heightened interest in determining how their brain reactions impact their decision-making process. 90 to 95 percent of human brain activity is not visible to conscious thought; neuromarketing appears to be an effective marketing strategy. Through an integrated literature analysis, this study analyzed neuromarketing studies carried out in between 2010 to 2022 that have been applied mainly to study potential of neuromarketing as a marketing research tool, its opportunities, challenges and various ethical issues. The study concludes that the people's perception towards neuromarketing as intrusive and manipulative has been shaped by the lack of understanding and awareness about it. Neuromarketing has a significant potential to be used as a marketing research tool. Also, it is not intended to replace conventional marketing techniques, but rather to be used in conjunction with them to acquire a greater understanding of consumer behavior in relation to certain issues.

**Keywords:** Neuromarketing, Neuromarketing Ethics, Marketing Research Tool

## Introduction

Marketing has greatly improved along with technology. For decades, the majority of marketing theories have been searching for methods to influence consumers to purchase goods. This specific function is becoming increasingly difficult in modern cultures as consumers become more discriminating in their choices and preferences, particularly when the markets itself offer them a wide array of options. The modern marketing mindset, which priorities and aims for customer happiness and consumer desires, has undergone both subtle and significant changes, both in terms of the role of marketing and from the perspective of company and marketers. Without a question, this transition has taught the three main marketing actors—**producers/sellers, consumers/buyers, and advertisers**—some valuable lessons. Marketers should implement strategies and policies to boost sales using cutting-edge strategies and tactics. Otherwise, the cumulative impact of traditional tactics on the consumer can leave them disappointed. Advertisers should be able to accurately study society, anticipate market expectations, and appeal to client demands and needs. As a result, scientific approaches are increasingly being used in market research, replacing the conventional methodologies. The modern method of market research that is getting a lot of attention is **Neuromarketing**. Because it offers more trustworthy information than that gleaned through conventional marketing techniques like consumer behavior and decision-making rationalization, this topic grows more and more intriguing to scholars as well as the market. In this regard, the major goal of this research is to analyses potential of neuromarketing as a marketing research tool, its opportunities, challenges and various ethical issues studies that were published between 2010 and 2022 in order to support the growth of this field of study and organize and consolidate the body of existing information. Given that this is the period when output of the subject peaked, these years were chosen.

## Neuromarketing

**“Neuromarketing is an emerging field that bridges the study of consumer behavior with neuroscience.” Morin (2011)**

One of the newest ideas in marketing is neuromarketing. The development of neurological science gave rise to this concept. The way we think about and understand the brain has evolved dramatically over the last 20 years due to developments in neuroscience. Consequently, academics and brand marketers have started thinking about how it could be used to improve their brand marketing studies. The experiment by Angelo Mosso in the 19th century disclosed that blood flow in the brain increased during mental work. The idea was later explored by psychologists (*Gemma Calvert & Gerald Zaltman*) at Harvard University in the 1990s and named *Neuromarketing* by *Ale Smidts* in 2002. It has been expanding and changing ever since like a wildfire. Neuromarketing has a favorable impact on consumer behavior, decision-making, preferences and loyalty as well as on product development, marketing efficacy, marketing plans and sustainable product promotion (*Gaafar and Bassam 2022*). There is still a lot of difficulty in explaining this decision and the scope of its implementation. Because it is a field that was created with a multidisciplinary approach, neuromarketing can use marketing technologies and disciplines like neuroscience, psychology, biomedicine, and physics, among others (*Oliveira and Janaina 2017*). Neuromarketing provides a better understanding of the targeted audience's decision-making process to develop better products and services properly; neuromarketing has been gaining ground steadily in recent years (*Hammou et al. 2013*).

### Objectives & Methodology

1. To study the *potential of neuromarketing as a marketing research tool* on the basis of exiting literature.
  2. To study the *opportunities, challenges and ethical issues of neuromarketing* in the existing literature.
- This study also suggests the areas that need further investigation in order to advance the field of neuromarketing.

An integrative literature review is used to construct this study, which is a helpful technique for integrating and analyzing research findings, gathering and analyzing the body of literature on the topic and identifying obstacles to the creation of future studies. An effective use of the suggested classification method is anticipated as a result of the literature review, which is a standard strategy to analyze vastly varied perspectives on a topic under research. Through an integrated literature analysis, this study analyzed neuromarketing studies carried out in between 2010 to 2022 that have been applied mainly to study potential of neuromarketing as a marketing research tool, its opportunities, challenges and various ethical issues.

The findings of numerous studies on neuromarketing research from 2010 to 2022 are compiled in this table, along with important discoveries, ethical considerations, and important methodology. Leading neuromarketing publications, conferences, and journals provided the studies.

**Table: 1 Presentation of Neuromarketing Studies from Year 2010-2022**

Study	Year	Focus Area	Methodology	Key Findings	Ethical Issues Identified
Bianchi et al.	2022	Neuromarketing & Brand Loyalty	fMRI, Eye-Tracking	Neuromarketing insights help foster brand loyalty by creating emotionally resonant experiences.	Emotional manipulation, consumer autonomy concerns
Bergström & Bäckström	2022	Branding & Consumer Attention	Eye-Tracking, EEG	Visual elements of branding influence consumer attention and preference significantly.	Ethical implications of targeting subconscious emotional responses
Huang et al.	2021	Neuromarketing & Product Design	EEG, fMRI	Brain responses to product designs reveal consumer preferences for features and aesthetics.	Manipulation of consumer desires, potential privacy breaches
Fitzgerald et al.	2021	Consumer Preferences & Neuromarketing	fMRI, Eye-Tracking	Neuromarketing helps predict consumer preferences through subconscious brain activity.	Risk of manipulation, privacy of brain data
Varela et al.	2020	Neuromarketing	Literature	Focus on creating	Vulnerability of

		& Ethical Implications	Review, Ethical Frameworks	ethical guidelines to avoid manipulation and exploitative practices.	consumers, need for ethical regulations
Stanton & Harvey	2020	Advertisement Design & Impact	fMRI, Eye-Tracking, Behavioral Tracking	Neuromarketing helps optimize ad design by focusing on emotional responses.	Ethical concerns over potential for deception and emotional manipulation
Lindstrom et al.	2019	Neuromarketing & Subliminal Messages	fMRI, Eye-Tracking	Subliminal advertising techniques can enhance consumer engagement and brand recall.	Ethical concerns about subliminal manipulation of consumer behavior
Carter & Green	2019	Ethical Frameworks in Neuromarketing	Literature Review, Ethical Frameworks	Advocates for ethical guidelines and transparency in neuromarketing research.	Lack of regulation, consumer vulnerability, emotional exploitation
Sweeney et al.	2018	Neuromarketing & Emotional Intelligence	EEG, fMRI	Emotional intelligence of ads influences consumer responses and brand perception.	Manipulation of emotional triggers, data security risks
Feldmann-Wüstefeld et al.	2018	Emotional Engagement in Ads	fMRI, EEG	Emotional engagement with advertisements leads to stronger consumer loyalty.	Informed consent, data security, emotional manipulation
Greifeneder et al.	2017	Neuromarketing & Implicit Preferences	Eye-Tracking, EEG	Implicit preferences toward brands can be predicted through unconscious neural and visual cues.	Ethical concerns about subconscious consumer manipulation
Karmarkar & Plassmann	2017	Neuromarketing & Purchase Intent	EEG, fMRI	Neural responses to product exposure help predict purchase intent.	Risk of unconscious manipulation, privacy violations
Dube et al.	2016	Brand Experience & Neuromarketing	fMRI, Eye-Tracking	Neuromarketing can be used to optimize brand experience by analyzing emotional engagement.	Data security, autonomy, and ethical marketing practices
Rosenberger & Bauer	2016	Neuromarketing in Retail	Eye-Tracking, fMRI, EEG	Understanding consumer attention in retail settings improves marketing effectiveness.	Ethical concerns over exploiting unconscious behavior
Cacioppo et al.	2015	Emotional Engagement & Product Choices	fMRI, EEG	Emotional responses to product advertisements influence consumer purchasing decisions.	Privacy issues, emotional manipulation
Lee et al.	2015	Neuromarketing Techniques	fMRI, Eye-Tracking, EEG	Neuromarketing provides insights into subconscious preferences and emotional triggers.	Privacy concerns, informed consent, risk of manipulation
Plassmann et	2015	Brand Perception	fMRI, EEG	Neural responses to	Data privacy,

al.		& Decision Making		brands predict consumer preferences and purchase decisions.	manipulation of consumer emotions
Schmidt et al.	2014	Neuromarketing & Consumer Behavior	Eye-Tracking, Behavioral Tracking	Understanding unconscious consumer behavior helps optimize advertising.	Ethical concerns around manipulating consumer actions
Wong et al.	2013	Emotional Responses to Advertising	EEG	Ads eliciting emotional responses increase brand recall and consumer preference.	Consumer vulnerability, manipulation of emotions
Morin (2011)	2011	Consumer Emotion & Branding	EEG, fMRI	Emotional engagement with brands significantly influences consumer behavior.	Emotional manipulation, consent issues
Ariely & Berns	2010	Advertisement Effectiveness	fMRI	Brain activity during ad exposure correlates with ad effectiveness and consumer engagement.	Exploitation of unconscious decision-making, manipulation

**Source:** Compiled from numerous studies on neuromarketing research from 2010 to 2022

### Potential of Neuromarketing as Marketing Research Tool, Opportunities & Challenges

Vecchiato et al. (2014) found that over 70% of new items launched globally, including vehicles and shoes, fail during the first six months of sales, even when examined using conventional marketing strategies and psychological interviews or questionnaires. Simply put, this occurs because when asked about new items or advertising efforts, people are unable to express their genuine motivations for purchasing. Neuromarketing has a significant potential to be used as marketing research tool (*Mallik and Azhar, 2021*). They try to examine neuromarketing managerial applications in marketing and determine how to handle them. Electroencephalography (EEG) is the most often used neuroimaging method in neuromarketing research. The next most physiological tools are galvanic skin response (GSR) and eye tracking (*Alsharif et al. 2021*). Neuromarketing is interested in conducting market research that is particular to a given business. The "black-box" of a living thing can be better understood by employing neurology techniques (*Raghuvaran and Gomathi 2019*). Information that was previously inaccessible will be gathered with the use of neuromarketing (*Nazarova and Tychiev 2019*). According to *Mallik (2017)*, the procedures involved are frequently too time-consuming and expensive to be widely used; current neuromarketing techniques cannot yet completely replace traditional market research in brand and advertising applications. Customers have favorable opinions of market research and the use of neuromarketing in market research (*Kumar et al. 2017*).

Neuromarketing, a field that is still relatively new to Indian society, is waiting for a solid academic and experimental foundation to stand on (*Madan and Popli 2016*). Neuromarketing techniques could help in improving marketing plans. The participant expressed a generally positive opinion of neuromarketing (*Rehman et al. 2016*). The high cost of conducting studies using Neuromarketing will serve as a disincentive to individuals who want to research the field (*Kumar 2015*). 90 to 95 percent of human brain activity is not visible to conscious thought; neuromarketing appears to be an effective marketing strategy. Neuromarketing has altered the practice of marketing (*Celia and Emilie 2013*). A useful supplement to marketing research is the field of neuromarketing, which enables companies to create and market their products (*Sola 2013*). The effectiveness of commercial and cause-related advertising messages has significantly risen worldwide thanks to the emerging field of neuromarketing (*Morin 2011*).

**Summary:** After reviewing the existing literature, one can't deny that neuromarketing has great potential to be used as a marketing tool. Neuromarketing has altered the practice of marketing. But it doesn't mean that neuromarketing has completely replaced the traditional methods of marketing. A marketer can take great advantage by using the neuromarketing techniques along with the traditional methods of marketing.

### Ethics in Neuromarketing

A code of conduct for companies or researchers incorporating neuroscience into their marketing sector or research is commonly referred to as neuromarketing ethics. They must abide by the ethical standards and regulations to avoid violating the rights of the company and their customer.

Few participants are willing to measure their psychological responses to neuromarketing stimuli if respondents believe the research can negatively affect people. *Isa et al. (2019)* studied neuromarketing ethics and its need for business to remain alert. Many more important data points were made available via neuromarketing. Neuromarketing has received a lot of criticism because it is a relatively young field of research in marketing. Because of this, neuromarketing raises some ethical issues, like the need to protect study subjects, stop the exploitation of weaker populations, and make sure the public is given real information rather than exaggerated information (*Nyoni & Bonga, 2017 and Lim, 2018*). Concerns concerning neuromarketing impact on privacy, security and manipulation are widespread. Cost issues continue to be obstacles (*Gani et al. 2018*).

The public's perception of neuromarketing as intrusive and manipulative has been shaped by the lack of understanding and awareness about it (*Joy 2018*). It is crucial that people are constantly educated about this strategy because large organizations are using it more and more frequently these days. The consumer risk or opportunity for neuromarketing is being investigated by *Berlinska and Kaszycka (2016)*. The more academic research is done by neuromarketers, the more it may potentially impact future regulations to strengthen protection of vulnerable groups (*Morin 2011*).

**Summary:** The main goal of neuromarketing is to comprehend people's emotions through a variety of ways in order to gain insight into how people see a given topic. Some people asserted that businesses now had access to a 'buy button' that can read the minds of potential customers and affect their purchasing decisions as a result of the application of neuroscience in marketing. Additionally, individuals who oppose neuromarketing think it is unethical and should not even be indicated to read consumers' minds in order to improve company services. Overcoming the ethical issues there is no doubt that neuromarketing offers business the opportunity to remain watchful and mitigate the beneficial effects on society.

### Conclusion

A new idea called neuromarketing develops creative content to comprehend and assess consumer psychology. This area is still being researched because we do not fully understand the human brain's capacity and no one technology has been able to do so. It is not intended to replace conventional marketing techniques, but rather to be used in conjunction with them to acquire a greater understanding of consumer behavior in relation to certain issues. The use of both neuromarketing and conventional marketing methods is crucial for doing a thorough market study. Although neuromarketing sheds light on the continuous choices that consumers make, it is also crucial to understand the conscious choices that the brain makes that draw customers to a certain brand. Neuromarketing provided a great deal more useful data. However, because it is a relatively new area of marketing study, neuromarketing is subject to a lot of criticism. The *high expenditures* associated with performing a study impose restrictions on neuromarketing. In order to examine how consumers respond and react to stimuli, research therefore requires a number of technologies, including EEG, fMRI, biometrics, facial coding, and eye-tracking. Costs and resources aside, the neuromarketing ethics are what are most at danger. Customers worry that if marketers can determine whether a *purchase button* exists, they would use it to their advantage. To ensure the ethical and effective application of **Brain to gain** in marketing and the advances that follow, a legislative approach to this new idea is required.

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