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NEUROMARKETING: HOW NEUROSCIENCE IS CHANGING ADVERTISING STRATEGIES

O.A.Ashurbaev
Senior Lecturer,MU University, Tashkent
N.SH.Baxtiyorovna,
MU University, Tashkent

Abstract: Neuromarketing joins the fields of neuroscience and marketing in trying to discover what makes people make choices without them even realizing it. With tools such as fMRI, EEG, and eye-tracking, companies can learn more about people's feelings and tastes, thus enabling them to make better advertising campaigns.

This article looks into how neuromarketing has revolutionized the art of advertising through an examination of the tactics by which Coca-Cola, Campbell's Soup, and BMW utilized these techniques in a manner that would stir an advertising viewer to become brand-loyal consumers. While neuromarketing has immense potential to make marketing functions more effective, it concurrently poses several ethical concerns, primarily on privacy and manipulation issues. Added to the social issues concerning neuromarketing, it has several pros and cons. This study is going to give a full picture of its place in modern advertising.

Keywords: Neuromarketing, neuroscience, advertising strategies, consumer behavior, fMRI, EEG, eye-tracking, emotional engagement, consumer decisions, brand loyalty.

1. Introduction

Imagine going through a store and grabbing for something without thinking about why it interests you. What makes you decide? Is it the color of the box, the way it's presented, or something deeper? This is where neuromarketing comes in. It's an interesting mix of neuroscience and marketing that goes beyond what people say they want to find the real, often unconscious reasons behind their choices. Neuromarketing helps businesses make campaigns and messages that connect with their audience by looking at brain activity and physical reactions (Harrell, 2019).

It's more important than ever to understand how people act in today's fast-paced and competitive advertising world. Surveys and focus groups are common ways to get information, but they don't always give a full picture of what makes people make decisions. Neuroscience has shown that our inner mind makes a lot of decisions. This means that what people think they want may not always match up with what they feel driven to choose. This is why businesses of all sizes, from tech giants like Google to consumer brands like Nestlé, are using neuromarketing to learn more about their clients (Gurgu, Gurgu and Tonis, 2020).

This article aims to investigate how neuromarketing is changing advertising tactics. It looks at the science behind neuromarketing, how it can be used in the real world, and the social issues that come up when it is used. Neuromarketing is a game-changing tool that blends imagination with scientific accuracy. This is important for companies that want to connect emotionally with their customers.

Furthermore, this article looks at how neuromarketing is changing advertising tactics using a secondary research technique. To give a full picture of neuromarketing's ideas uses, and problems, academic journals,

business reports, and case studies are researched. The article makes sure that its results are reliable and in-depth by focusing on trustworthy and well-known sources. The goal of this method is to give a complete picture of neuromarketing's pros and cons so that companies and marketers can make better decisions.

2. Literature Review

2.1. How to Understand Neuromarketing: The Intersection of Neuroscience and Advertising

Neuromarketing looks at customer behavior by watching brain activity and bodily reactions. It blends neuroscience and marketing. Traditional methods depend on people's self-reported information, but neuromarketing uses mental processes that have a big impact on choices (Morin, 2011). Functional Magnetic Resonance Imaging (fMRI), Electroencephalography (EEG), and eye-tracking are some of the techniques that can be used to find out what people like, what makes them feel, and how they make decisions.

According to research, about 95% of buying choices are made unconsciously (Chierotti, 2018). Neuromarketing helps companies make programs that directly appeal to people's emotions. This makes advertising more targeted and successful. This strategy is meant to help with the rising problem of getting people's attention in a market with a lot of competition.

2.2. The Background of Neuromarketing: A New Era in Understanding Customers

Neuromarketing became popular in the early 2000s when brain tools got easier to get and cheaper. Researchers did some of the first studies to look into how the brain processes how we think about and feel about brands. For example, McClure et al.'s famous fMRI study from 2014 showed how branding affects how people taste. It showed that people liked Coca-Cola more than Pepsi when they knew the name, even though the two drinks tasted the same. This research paved the way for using neuroscientific methods in marketing studies by showing that branding affects not only what people want but also how their brains work.

Neuromarketing is now used by businesses like **Nestlé** and **Google** to improve their advertising tactics. Nestlé, for example, uses eye-tracking to study how people react to different kinds of packages and visuals. Google also uses neuromarketing information to improve ad places and styles, which makes users more interested. The shift from old-fashioned to data-driven, neuroscience-based advertising methods is shown by the growing use of these methods (Kühn, Gallinat & Brass, 2013).

2.3. Important Neuromarketing Strategies: A Comprehensive Look at Consumer Thoughts

Neuromarketing uses several advanced methods to find out how people are feeling. These methods give marketers detailed information about how customers act, which makes them essential to their toolbox.

- **Functional Magnetic Resonance Imaging (fMRI):** This method checks for changes in blood flow to the brain to find out how active it is. There have been studies that look at buyer interests and how ads make people feel. fMRI can find parts of the brain that are involved with happiness and making decisions, according to a study in the Journal of Consumer Neuroscience (Kühn et al., 2013).
- **Electroencephalography (EEG):** EEG tracks the electrical activity in the brain and can tell you a lot about how focused and emotionally involved you are. It works especially well in real-time situations, like when looking at how people react to TV ads or content on the internet.
- **Eye-Tracking:** Marketers can find out which parts of an ad get the most attention and for how long by watching how people look at them. Eye-tracking studies have helped improve the layouts of websites, stores, and packing (Wedel & Pieters, 2018).
- **Emotion Recognition and Coding of the Face:** These methods look at facial movements to figure out how someone is feeling. For instance, the tech company **Affectiva** uses facial coding to see how people react to video material, which helps brands make their messages more effective.

2.4. Thoughts on Ethics in Neuromarketing.

Neuromarketing has a lot of benefits, but it also brings up some very important ethical questions. There have been arguments about buyer liberty and agreement because of the possibility of subconsciously

changing how people act (Stanton, Sinnott-Armstrong & Huettel, 2017). Neuromarketing could be used to take advantage of people's weaknesses, like targeting them when they are emotionally weak (International Neuroethics Society, 2020).

Also, collecting brain data can be bad for your privacy. Companies need to make sure that this kind of data is kept safe and anonymous so that it can't be misused. Neuromarketing practices should be open and based on informed permission, according to ethical models like those put forward by the International Neuroethics Society. Taking these worries into account is important to keep customers' trust and make sure that neuromarketing technologies are used responsibly (International Neuroethics Society, 2020).

2.5. Criticisms and challenges.

Neuromarketing has some problems, even though it has a lot of potential. Brain imaging tools like fMRI and EEG are very expensive, so only big companies can afford to use them. This means that smaller businesses can't use them either. Also, it takes special skills to figure out what brain data means, and the effects aren't always clear.

Some people also say that neuromarketing shouldn't be relied on too much, because it should work with standard marketing methods, not replace them. Neuroscience findings, behavioral data, and qualitative studies should all be put together to get a full picture of how people act (Wedel & Pieters, 2008).

2.6. Plans for the future.

Neuromarketing will only become more useful when it is combined with new technologies. Neuromarketing studies are about to get more accurate and scalable thanks to artificial intelligence (AI) and big data analytics. AI can find trends and connections that would be hard to find by hand by looking at very large datasets (Huang & Rust, 2021).

Smartwatches and biological monitors are two examples of wearable tech that could be used for real-time neuromarketing. These technologies can track how people's bodies react to ads in everyday situations, giving us more accurate information about how people act (Kühn et al., 2013).

3.0.Purpose of study

The main goal of this article is to witness how neuroscience coupled with marketing strategies renews the conceptual and executing ability of an advertising plan of a company. With neuroscience tools, businesses are in a position to look deep into the acting and feeling of their customers while developing a personalized marketing plan that is far more efficient and effective through the use of fMRI, EEG, and eye-tracking.

Article also looks at case studies of various companies that have used neuromarketing to create real-life advertising campaigns and their impact on the bottom line. The current study explains exactly how neuroscience is changing the face of ad creation and give companies valuable insight into how to exploit these techniques to engage their customers at a much deeper and more subconscious level.

4.0.Research Questions

- What are the changes that neuromarketing is making to advertising strategies?
- How have companies used neuroscience to improve their ads?

5.0.Research methods

The secondary research design has been followed for this article, and the topic chosen is how neuromarketing is changing advertising tactics. It entails the gathering and analysis of pre-existing information collected from reliable and accessible sources such as books, case studies, academic papers, and industry reports. This will enable delving into well-documented results and insights that shed light on the subject matter but without collecting data.

The most important part of this research is the real-life case studies emanating from businesses that have used neuromarketing methods in their adverts with good results. These case studies show how fMRI, EEG, and eye-tracking find application in determining how people feel, what they like, and how they make

decisions. The purpose of the study will be to show how these usages can completely revolutionize the outcomes of ads with the use of neuromarketing.

This research study is best suited to a secondary research method since it makes use of existing knowledge and information to answer the question of the research, hence saving on time needed for the collection of a great amount of primary data. It also makes sure that a lot of different points of view are available, such as those from business, neuroscience, and psychology. This study not only explains the ideas and tools of neuromarketing, but also looks at how well they work and what they mean in real-life situations by using both theory and practical case studies. This will help try to identify trends and make useful conclusions about how neuroscience is changing the way ads are created today.

6.0.Research Hypothesis

Hypothesis 1: Neuromarketing tools and methods make advertising campaigns much more successful by giving advertisers more information about how people behave and what they like.

Hypothesis 2: Companies that use neuromarketing are better at making personalized ads and appealing to people's emotions than companies that use traditional marketing methods.

Hypothesis 3: The use of neuromarketing methods like fMRI, EEG, and eye-tracking increases customer loyalty and involvement in a way that can be measured.

Hypothesis 4: Concerns about customer privacy and being manipulated are a big problem with neuromarketing becoming widely used.

7.0.Research Results and Findings

Changing Marketing Approaches

Neuromarketing, which is the combination of neuroscience and marketing, has changed advertising tactics a lot by giving advertisers more information about how people act. Advertising tactics have changed a lot because it lets companies tap into people's inner tastes. Focus groups and polls, which get people's honest answers, were often used in old-fashioned advertising. **Functional Magnetic Resonance Imaging** (fMRI), **Electroencephalography** (EEG), and **eye-tracking** are some of the tools that neuromarketing uses to figure out how people are feeling and thinking. According to Kantar (2023), this change has helped businesses make ads that connect with their customers more deeply.

An example that stands out is **Coca-Cola's "Open Happiness"** ad. The company used neuromarketing tools to look at brain activity and mental reactions to find out what made people feel good. The results of this study were used to improve ads, which made people more interested in and loyal to the brand (iMotions, 2017). This shows how neuromarketing helps businesses go beyond simple consumer wants to make sure messages are in line with people's emotional needs.

Using neuroscience to make ads better

Neuromarketing gives companies useful information that they can use to make their ads more effective. For example, the **National Cancer Institute** used fMRI scans to try three ad campaigns for its call services. Researchers found the program that turned on parts of the brain that are involved in making decisions and feeling emotionally involved. Because of this, the chosen ad brought in a lot more calls to the hotline (The Guardian, 2015).

Campbell's Soup is another example of neuromarketing at work. The company saw how people responded to its package by using eye-tracking and face code. By making changes like altering the colors and shapes of the labels, the design became more appealing to customers, which eventually led to more sales (iMotions, 2017). These examples show how neuromarketing improves the effectiveness of ads by better targeting what people want.

Using Neuromarketing to Customize Advertising

Neuromarketing has turned its attention to personalization more than ever. Companies make ads more relevant to each person's tastes by looking at how their brains react to different situations. For example, **BMW** used EEG to see how people responded to different ads for cars. The company was able to make ads that got people excited and interested, which led to more customers being interested (Kantar, 202oy).

Neuromarketing ideas are also used by digital ad networks like **Google** and **Facebook**. Advertisements get to the right people at the best times thanks to algorithms that are driven by knowledge of what makes people think. The Times (2023) says that this approach makes ads more relevant and successful, which increases return on investment.

Changing Strategies with Applications

Neuromarketing has changed the way ads work by letting businesses make campaigns that connect with people on a deeper, more emotional level. For example**, Procter & Gamble** (P&G), used neuromarketing to see how people felt about its Pampers ads. The results showed that ads that focused on a baby's happiness got more positive responses than ads that only talked about the perks of the product. Because of this new information, the message was changed, which led to a big increase in sales.

In the same way, expensive car brands like **BMW** and **Mercedes-Benz** use EEG to find out how people react to their ads and events in the store. These brands can make more appealing marketing plans that fit with their high-end image by figuring out what makes people excited and interested (Kühn, Gallinat & Brass, 2013).

Another case study is Hyundai also used neuromarketing to make customers happier as well. The company made car interiors that made people feel good by measuring how people responded emotionally to different parts of the design. The Times (2023) says this method not only made the customer experience better, but it also made people think more highly of the brand. This shows how neuromarketing can be used in more areas of product development and advertising.

8.0.Discussion

The research results have provided valuable answers to the initial research questions and have also clarified the validity of the hypotheses that were put forward.

There have been several case studies that have been looked at to answer the first research question, **"What changes are neuromarketing making to advertising strategies?"** The results make it clear that neuromarketing has changed the way advertising is done. Instead of using old-fashioned methods like focus groups and polls, advertisers now use a more scientific technique to understand how people act. Using advanced neuroscience tools has helped businesses understand how people are reacting without them even realizing it. This has led to ads that are more emotionally engaged and successful. In this way, the results support the claim that neuromarketing is changing the way ads are made.

The results of the study also go into great detail about the second research question, which was **"How have companies used neuroscience to improve their ads?"** Through real-life case studies, companies have shown that they have used neuromarketing methods to make their ads more successful. Companies have been able to make their ads more emotionally relevant to consumers by using tools like fMRI to track brain activity and EEG to track emotional responses. This has led to more successful campaigns. These results support the idea that neuroscience can help make ads better by making sure they hit home with people more deeply.

When looking at the assumptions, the findings strongly support Hypothesis 1, which says that neuromarketing tools and methods make advertising efforts more successful by giving advertisers more information about how people act. The research from Coca-Cola, Campbell's Soup, and the National Cancer Institute shows that using neuroscience in advertising makes it much more successful by letting marketers connect with the emotions and thoughts of their target audience.

The results also support Hypothesis 2, which says that companies that use neuromarketing are better at making ads that are relevant to each person. Case studies like how BMW customized car ads with EEG show that neuromarketing helps brands make more relevant and personalized ads, which in turn connect with customers on a deeper emotional level.

However, only some evidence supports Hypothesis 3, which says that neuromarketing techniques make customers more loyal and involved. Emotional resonance in ads worked for companies like Coca-Cola to get people more interested and loyal. However, the research also showed that long-term customer loyalty may depend on things other than neuromarketing, like the overall brand experience and product quality.

Finally, Hypothesis 4, which brings up privacy and influence issues with neuromarketing, is recognized, but not fully looked into in the study. There are ethical issues about neuromarketing, especially when it comes to collecting and using customer data. However, the results mostly talked about the good things that neuromarketing has done for advertising tactics. With that said, it's clear that privacy worries are still a big problem that needs to be fixed as more people use these tools.

9.0.Recommendation and Conclusion

In conclusion, neuromarketing is already changing the way advertisements work, for it allows a company to learn more and more about how people behave. By using modern tools such as fMRI and EEG, companies can create ads that emotionally resonate with people and hence yield huge results. On the other hand, when using neuromarketing, one has to put up with ethics problems that include worries about data protection and hoodwinking of customers.

Companies should be aware of the pros and cons to apply it effectively. First, businesses should promise to act honestly, be open, and protect customer information to retain the trust of people. Secondly, they should make access to neuromarketing tools easier for small businesses so that these new ideas could help them. Thirdly, the integration of neuromarketing insights with conventional research techniques gives a complete insight into people's likings and how they behave. Finally, teaching marketing teams about neuromarketing will ensure it is done intelligently and responsibly.

Overall, Neuromarketing can change the face of advertising, but its success will lie in how well integrated and ethically it is put into place. Companies utilizing such findings intelligently will be able to create stronger relationships with customers and achieve long-term growth by making ads that are both successful and in line with what customers value.

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