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Navigating the Neuromarketing Landscape: Valuable Insights for Businesses in a Post-Pandemic World

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ABSTRACT

Purpose: There has been a significant rise in usage of neuromarketing for conducting marketing research, but a large number of businesses are still skeptical about integrating such methods into their marketing research toolkit. The reason for such skepticism may be certain misconceptions. One such misconception is that neuromarketing is a difficult and expensive marketing research tool. Another misconception is whether neuromarketing is a mere gimmick or an insightful marketing research method. Hence, this study explores the present stance of neuromarketing and its pertinent misconceptions.

Methodology: The study conducts qualitative, in-depth interviews with neuromarketing experts from eleven countries. The study then subjects interview transcripts to thematic analysis. Through this analysis, the study divulges three themes and eight subthemes related to the present stance of neuromarketing and its pertinent misconceptions.

Findings: The study divulges three notable findings. First, the present stance of neuromarketing highlights the growth and importance of neuromarketing methods in the marketing research industry. It also demonstrates the application of neuromarketing in making strategic marketing decisions. Second, the study clarifies that factors such as the elongated learning curve, complexities, adaptation, and economic considerations hinder neuromarketing adoption. Third, the study clarifies that neuromarketing is not a gimmick and expounds on the value and efficacy of neuromarketing methods in conducting marketing research studies. It also outlines the importance of combating bogus neuromarketing consultants who negatively impact the perception of neuromarketing among businesses, consumers, and regulatory bodies.

Research implications: This study undertook the initiative to procure primary qualitative data through in-depth interviews to provide first-hand perspectives into what experts in the marketing research industry think about the present stance of neuromarketing and its pertinent misconceptions. It builds upon existing literature on the present stance of neuromarketing, which largely relies on secondary data. The study also extends prior literature on neuromarketing by highlighting the need for specialized expertise, the necessity for considering ethical considerations, and the need for cost-effective solutions. Besides this, the contribution of this study also aligns with the prior discussions on evolving methodologies in consumer behavior research.

Practical implications: This study implies that neuromarketing enables businesses to make informed strategic marketing decisions, anticipate marketing trends, and foster sustainable growth. Businesses must allocate substantial resources to hire marketing research companies or third-party neuromarketing consultants. However, before making such investments, businesses should thoroughly evaluate the reliability and validity of claims made by neuromarketing consultants and marketing research companies. Due to the complexities and stringent ethical regulations, it is essential to collaborate exclusively with reputable marketing research firms or independent neuromarketing consultants with a proven track record of success.

Originality/Value: Contrary to the prior studies based on secondary data, this study leverages primary qualitative data to explore the present stance of neuromarketing and its pertinent misconceptions. The study emphasizes misconceptions hindering the adoption of neuromarketing, which was primarily left unexplored in the extant literature. In this way, the study creates unprecedented value for businesses, marketing research companies, regulatory bodies, and independent neuromarketers.

KEYWORDS

Neuromarketing; present-stance; difficult; expensive; gimmick; insightful; marketing research

Those who fail to learn from history are doomed to repeat it.

-Winston Churchill

Introduction

Neuromarketing is a marketing research method that aims to explore the subconscious insights of consumers pertaining to various marketing stimuli (Bajaj, Syed, and Singh 2023; Bhardwaj et al. 2023). It draws from multiple domains, such as economics, neuroscience, marketing, and psychology. Neuromarketing includes various neurological and physiological tools, with which neuromarketers can access over and above the surface-level insights offered by traditional marketing research methods (Meyerding and Mehlhose 2020; Oberg 2023). These methods include surveys, interviews, focus groups, and other self-reporting measures that rely on explicit responses often subjected to cognitive and social desirability biases (Harris, Ciorciari, and Gountas 2018; Luna-Nevarez 2021; Plassmann et al. 2015). In contrast, neuromarketing tools and techniques emphasize implicit reactions that are often automatic and spontaneous (Sung et al. 2019). Due to this, implicit reactions are often driven by emotions, associations, and beliefs deeply rooted in the subconscious of the consumers (Dastidar, Sunder, and Shah 2022; Van Zeeland and Henseler 2018; Wilson, Gaines, and Hill 2008). When neuromarketers expose consumers to advertisements, products, or brand messaging, their brain immediately generates a reaction that often does not align with its explicit counterpart (De Paula et al. 2022; Levallois, Smidts, and Wouters 2019; Van Zeeland-Van Der Holst and Henseler 2018). By examining these implicit reactions, businesses gain more profound insights into designing products, experiences, marketing campaigns, and branding material, which resonates with the subconscious level of consumers (Agarwal and Dutta 2015; Fugate 2007). This way, businesses create strong emotional connections with consumers that last long and build brand loyalty.

Existing studies on neuromarketing rely on the secondary data sources, such as reviews (see - (Bhardwaj et al. 2023; Bojić, Tucaković, and Nikolić 2021; Casado-Aranda et al. 2023; Kajla et al. 2023; Lee, Chamberlain, and Brandes 2018;

Lim 2018a; Oberg 2023), conceptual articles (see - Agarwal and Dutta 2015; Plassmann et al. 2015; Sung et al. 2019), and commentaries (see - Lee et al. 2017; Lim 2018b; Spence 2016). With their emphasis on secondary data, these studies may overlook real-world practical developments. Likewise, the complexities of neuromarketing techniques and their practical implementation in marketing research studies may not be comprehensively grasped by relying solely on secondary data. Even though these existent studies provide profound insights, there exists a number of notable gaps concerning the present stance of neuromarketing and its pertinent misconceptions. One of these gaps is that the extant literature lacks insights into the present stance of neuromarketing in light of the changes brought about by the COVID-19 pandemic. Beside this, it is still unclear why businesses perceive neuromarketing as a difficult and expensive tool. Furthermore, the present scholarly discourse provides a very limited understanding of whether neuromarketing is a gimmick or an insightful market research method. This lack of clarity could hinder its adoption among potential stakeholders and justify whether neuromarketing has the potential to be an asset in the marketer's toolkit in the post-pandemic era. Likewise, the stakeholders are uncertain whether neuromarketing provides reliable insights or is just a passing gimmick. Due to this, potential stakeholders may struggle to invest in the neuromarketing initiatives and miss out on opportunities to gain a competitive edge against their competitors.

The present study seeks to address these research gaps by conducting primary in-depth interviews with leading neuromarketing experts from eleven different countries. Through the engagement with these experts, the study uncovers first-hand insights into the present stance of neuromarketing and its pertinent misconceptions. This approach is noteworthy in bridging the gap between theory and real-world application. Beside this, the present study also aims to uncover practical insights and potential challenges for conducting neuromarketing studies. By doing so, not only it adds to existing literature on neuromarketing, but also it provides practical insights to neuromarketers, businesses, governments, and marketing research companies. As the prevailing ambiguity

around the difficulties and perceived cost of neuromarketing applications poses a substantial obstacle to its adoption, the present study aims to shed light on the value and significance of neuromarketing and empower stakeholders to make informed decisions about its incorporation into their existing marketing research budgets.

As far as the organization is concerned, this study is organized in the following manner. The subsequent section delves deep into the existing literature on neuromarketing. Section “Methods” sheds light on the methodology used in the study. Findings are presented in the fourth section. The fifth section includes discussion, theoretical implications, and managerial implications. The final section concludes the study and clarifies the potential limitations of the study and pertinent future research directions.

Literature review

Neuromarketing is a field that combines neuroscience with marketing to investigate the brain's responses to marketing stimuli (Bhardwaj et al. 2023; Casado-Aranda et al. 2023; Kajla et al. 2023). By utilizing neuroscientific principles, theories, and techniques, businesses can better understand consumer behavior and make more effective marketing decisions (Lim 2018a; Spence 2016). These decisions include optimizing brand communication, product design, and advertisement campaigns across print and online platforms (Batra and Keller 2016). Ale Smidts initially proposed the concept of neuro-marketing in 2002, which refers to the application of neuroscientific techniques to better understand consumer behavior and develop more effective marketing strategies (Lim 2018a). The field of neuromarketing has advanced significantly with the incorporation of neuroscientific tools, such as functional magnetic resonance imaging (fMRI), electroencephalograph (EEG), eye tracking, and heart rate variability (Casado-Aranda et al. 2023; Hsu and Cheng 2018; Rawnaque et al. 2020). Initially, this development indicated a gradual transformation from traditional marketing research techniques, as neuromarketing tools were considered more precise and insightful (Stanton, Sinnott-Armstrong, and Huettel 2016). Many businesses have started acknowledging the constraints of relying solely on

traditional marketing research measures and are looking to adopt neuromarketing techniques that offer access to subconscious consumer insights (Sung et al. 2019).

Businesses that plan to incorporate neuromarketing into their existing marketing research strategy may confront some initial barriers, including significant costs, ethical concerns, and specialized expertise (Stanton, Sinnott-Armstrong, and Huettel 2016; Sung et al. 2019). A closer examination of the existing literature reveals that neuromarketing is an interdisciplinary field that encompasses neuroscience, economics, psychology, and marketing (Lee, Chamberlain, and Brandes 2018). Identifying experts with this interdisciplinary knowledge can be challenging, and even if found, their fees are often quite high. In the meantime, hiring a neuromarketing expert and conducting in-house neuromarketing studies can be even more costly. Moreover, neuromarketing tools, such as fMRI, EEG, and eye tracking, can incur substantial expenses, posing a financial hurdle for many businesses (Sung et al. 2019). Due to this, businesses with larger marketing budgets can only make strategic investments in neuromarketing research, as it promises substantial long-term returns (Levallois, Smidts, and Wouters 2019). Amidst these challenges, businesses are required to follow stringent ethical considerations while conducting neuromarketing studies. They must obtain informed consent from participants, ensuring they fully understand the study and consent to use their neural data for marketing research (Ülman, Çakar, and Yıldız 2014). Additionally, businesses must protect participants' privacy by safeguarding their data from unauthorized access or misuse (Stanton, Sinnott-Armstrong, and Huettel 2016; Wilson, Gaines, and Hill 2008). It is also crucial for businesses to respect consumers' autonomy and avoid any undue manipulation that could impact the participants' decisions (Bakardjieva and Kimmèl 2016; Bojić, Tucaković, and Nikolić 2021).

There is uncertainty among businesses on whether neuromarketing is an insightful tool for marketing research or just a gimmick. The existing literature demonstrates that popular news outlets greatly influence the perception of neuromarketing, which tends to emphasize its negative aspects

more. Neuroscientific tools can also be perceived as complex and opaque, leading to skepticism among businesses about their practical value (Hensel, Wolter, and Znanewitz 2016; Lee, Chamberlain, and Brandes 2018). This skepticism may stem from a lack of understanding about how neuromarketing tools work and their potential applications, as well as inconsistent research findings due to the field's evolving nature (Bhardwaj et al. 2023; Ramsøy 2014, 357; Senior and Lee 2008). Due to these underlying concerns, businesses struggle to see the possibility of integrating neuromarketing into their existing marketing budget. Some neuromarketing consultants and marketing research firms make exaggerated claims, such as their ability to predict consumer behavior accurately (Bakardjieva and Kimmél 2016; Stanton, Sinnott-Armstrong, and Huettel 2016). These overhyped claims may lead to unrealistic expectations, which could diminish neuromarketing's credibility in commercial research. Additionally, the lack of generally recognized industry norms and guidelines for neuromarketing practices may raise concerns about reliability and validity (Bhardwaj et al. 2023; Levallois, Smidts, and Wouters 2019). Due to the ambiguity surrounding neuromarketing, businesses may hesitate to embrace it as a reliable marketing research method, instead viewing it as a passing gimmick.

Notwithstanding these challenges and concerns, the domain of neuromarketing is continuously growing. The emerging applications of neuromarketing into new avenues such as design, pricing psychology, gamification, and communication research (Behl et al. 2023; Boz, Arslan, and Koç 2017; Casado-Aranda et al. 2023; Spence 2016). Neuroscience-inspired design means using neuroscientific insights to modify the perception and preference of products

among consumers using the principles of neuromarketing, neuroergonomics, and neurogastronomy (Bakardjieva and Kimmél 2016; Spence 2016). Similarly, neuromarketing could explore the color, shape, and other design aspects in the logo, label, and typeface, potentially impacting product design to evoke neural responses that could impact consumers' willingness to pay. Along similar lines, understanding pricing psychology provides businesses with invaluable insights into the cognitive processes underlying the perception of value among consumers (Boz, Arslan, and Koç 2017). Doing so, businesses can analyze consumers' perception of different price points, discount offers, and perceived value. These insights can inform pricing strategies that consumers can resonate. Moreover, Behl et al. (2023) argue that integrating neuromarketing with gamification fosters consumer engagement and long-term brand loyalty. Marketers can tap into consumers' intrinsic motivation and reward systems by providing gamified experiences that could potentially captivate audiences and assist brands in building long-lasting brand associations. Moving from product design and pricing, the impact of neuromarketing also extends to communication research. Businesses can increase their engagement by refining their communication strategies by twigging the neural responses of consumers toward their advertisement (Bajaj, Syed, and Singh 2023; Casado-Aranda et al. 2023).

Despite the significant contributions made by previous studies, businesses lack clarity regarding the present stance of neuromarketing and its pertinent misconceptions. In addition, many businesses hold misconceptions about neuromarketing, such as the belief that it is an expensive and difficult-to-implement marketing research method. There is a pressing need to determine whether neuromarketing is merely a gimmick or a valuable marketing

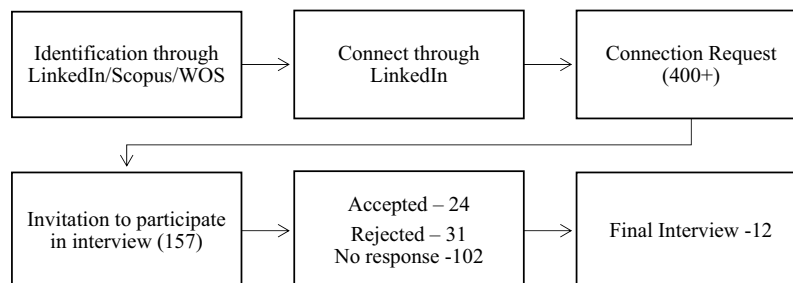


Figure 1. Identification of experts. Source: authors' own

research method. To address these concerns, this study plans to conduct in-depth semi-structured interviews with neuromarketing experts. These experts can provide valuable insights into the present state of neuromarketing and its pertinent misconceptions. The study will interview established neuromarketing experts to enhance the credibility and trustworthiness of this study. These experts are often aware of the latest research trends and nascent industrial applications. The methods used in this study will be further elaborated in the ensuing section.

Methods

Data collection

In order to broaden the existing literature on these aspects, a qualitative study is proposed. This study included semi-structured interviews with neuromarketing experts from various countries (Rezaei et al. 2021). The study recruited experts based on purposive sampling (Creswell and Poth 2017). A semi-structured interview schedule was developed in line with the research questions. The experts were identified via the LinkedIn platform and two databases, Scopus and Web of Science (see Figure 1). The authors joined LinkedIn's two Neuromarketing groups,

namely “Neuromarketing” and “Neuromarketing Science and Business Association.” They followed two hashtags, “#neuromarketing” and “#neuroscience,” to identify experts (Rezaei et al. 2021) who regularly use these hashtags to engage with their respective audiences. The experts were recruited for interviews using LinkedIn, the largest professional network in the world (Rezaei et al. 2021).

The connection request was sent to 400+ experts. One hundred fifty-seven experts accepted the connection request, and these experts were sent invitations to participate in our study. This invitation was an appeal to them to participate in our research. This invitation contained the purpose of research, available dates, and time slots for 30–45 minutes' in-depth interviews as per their country-specific time zones. These experts were given the preference of selecting their preferred online platforms (Zoom, Google Meet, and Microsoft Teams) for the interview. One hundred two experts did not respond to our interview request, 31 rejected it, citing their ongoing engagements, and 24 accepted our interview request. Data collection and analysis were conducted iteratively to determine the point at which information saturation was reached. Data saturation was observed upon completing the eighth interview (Francis et al. 2010). Still, four additional interviews were conducted, taking the

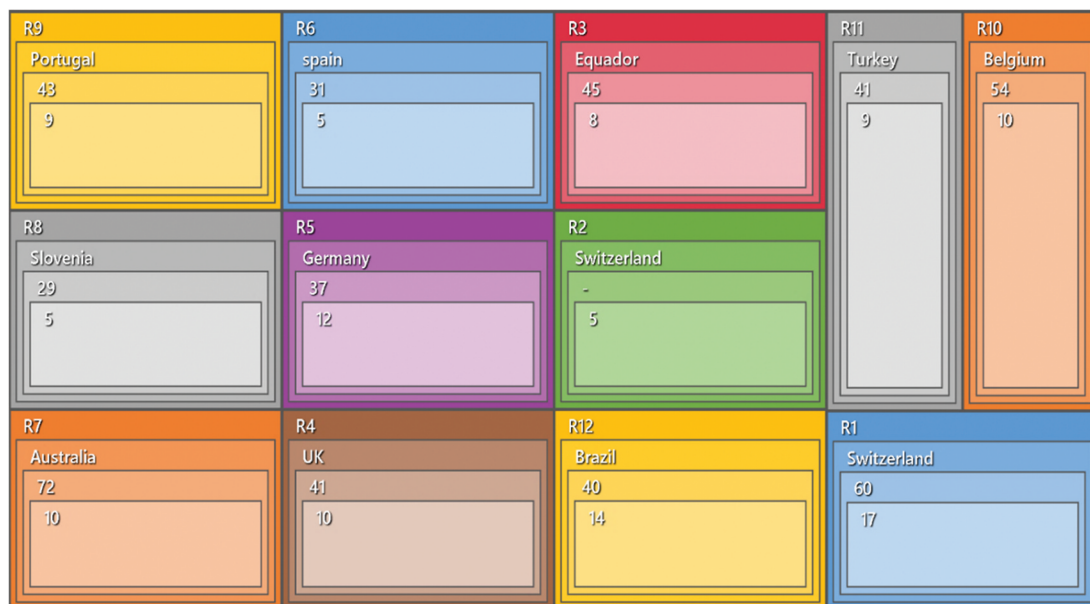


Figure 2. Expert demographics (respondent tag, country, age, and years of experience). Source – authors' data. Note – One of the experts from Switzerland did not disclose his/her age.

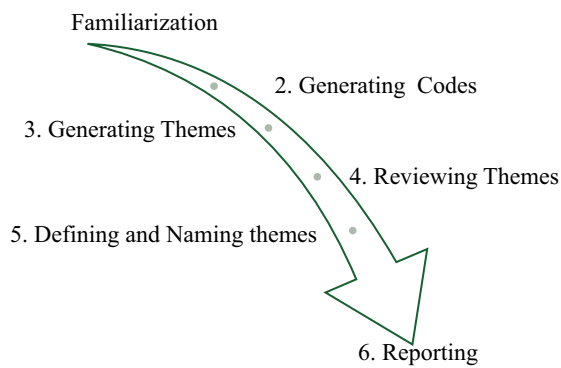


Figure 3. Steps in thematic analysis. Source - Adapted from Braun and Clarke (2006)

final number of interviews to twelve. Before commencing each interview, we obtained explicit oral informed consent from all the experts.

Participant details

Experts were recruited from eleven countries (see Figure 2). The participants ranged in age from 29 to 60 years old. The experts' work experience ranged from 5 to 17 years, and they came from diverse backgrounds, including

professors, scholars, and entrepreneurs. This study was part of the more extensive qualitative study, which included eleven questions. However, the present study only includes three questions which were "What is neuromarketing?," "Does neuromarketing work, or is it just a gimmick? Do companies really need those extra insights to be successful?," and "Is neuromarketing very difficult and expensive to apply? Do you feel that extra hustle and costs are justified by any means?."

Method and procedure of data analysis

This study employed Braun and Clarke's (2006) five phases (see Figure 3) to conduct a thematic analysis. The first phase involved both researchers becoming familiar with the qualitative data, with each interview transcript being read recursively to ascertain initial ideas and gain a sense of commonality. The second phase began by formulating the initial codes, during which both the researchers independently coded the interview transcripts. The intercoder reliability of a portion of the coded data was then evaluated, and any variations

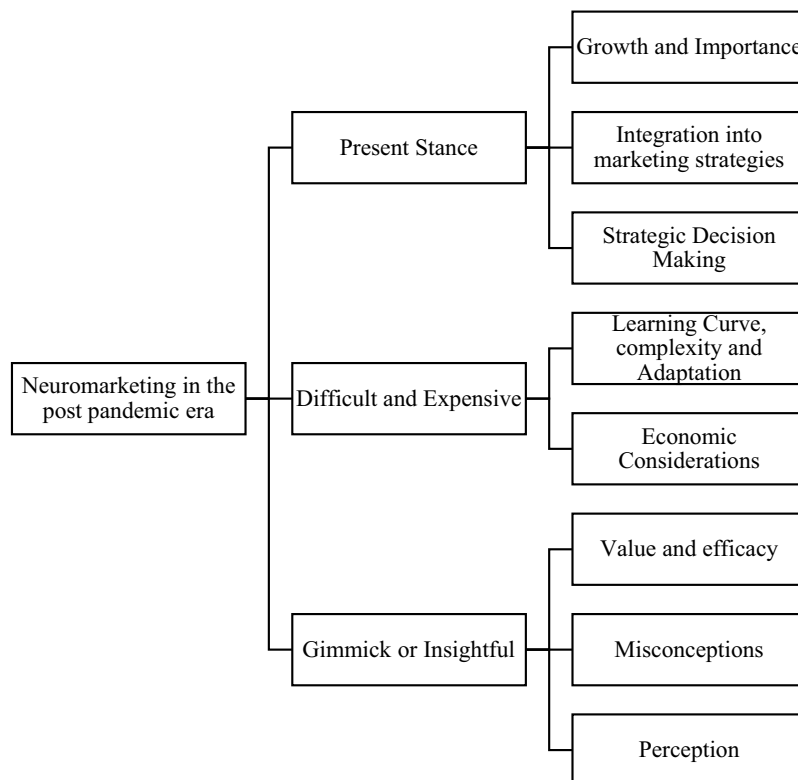


Figure 4. Thematic map. Source authors' own

(including misunderstandings, exclusions, and abnormalities) were identified, investigated, and corrected. The third phase was to identify themes that required both researchers to discretely identify similar codes and texts based on how closely they relate to specific subjects. The fourth phase comprised an evaluation of the themes. Thus, both researchers returned for another review of the intercoder reliability and reached a consensus on grouping assignments and naming themes. After an agreement between the researchers, a team of two separate researchers (not engaged in data collection or analysis) audited the procedure followed for thematic analysis and scrutinized the results to ascertain its trustworthiness (i.e., credibility, transferability, dependability, and confirmability) (Lincoln and Guba 1985). The conclusion of this process resulted in establishing three overarching themes and eight underlying subthemes relating to the present stance of neuromarketing and its pertinent misconceptions, which will be discussed in the final phase of thematic analysis, namely reporting thematic findings and their implications. The reliability of the themes was further supported by word clouds created using NVivo (Braun and Clarke, 2006; Vignato et al. 2021). The following section will discuss the identified themes and subthemes in detail.

Findings

The findings of the thematic analysis revealed three primary themes and eight sub-themes that elucidate the present stance of Neuromarketing (see Figure 4). It also informs businesses whether neuromarketing is an expensive and difficult or a valuable and insightful technique, especially in

the post-pandemic era. The first theme relates to the “Present Stance” which includes insights on subthemes of “*growth and importance*,” “*Integration into marketing research strategies*,” “*Strategic decision making*.” The second theme is “*Difficult and Expensive*” incorporates insights on “*learning curve, complexities, and adaptation*,” “*economic considerations*.” The third theme “*Gimmick or Insightful*” divulges insights on *value & efficacy, misconceptions, and perception*.

Present stance

While discussing the present stance of neuromarketing, experts 1&3 articulate regarding the *growth and importance* of neuromarketing. Although organizations conduct business transactions, these transactions are made by people. So, neuromarketing can help us understand the underlying decision-making processes. These processes can demystify how the key decision makers in both the parties involved in the transaction behave. Identifying the transaction’s most crucial aspects will also help reduce friction. Expert 5 concurs with expert 1&3 and states that neuromarketing can assist businesses in enhancing their communication strategies. It does so by tapping into the consumers’ subconscious reactions to augment the memorability and impact of the message. Through precise testing and refinement of messages using neurological and physiological neuromarketing helps businesses optimize their media placement for maximum reach and engagement. Expert 12 also stresses that neuromarketing is poised to play a significant role in the future of economic science (see Table 1). This multidisciplinary approach has the potential to revolutionize

Table 1. Sample excerpts for the theme “Present stance”.

Theme	Subthemes	Sample Excerpts
Present Stance	Growth and Importance	Expert 5: “In my opinion, I always have two definitions. . . Using those insights to enhance communication and marketing, we can call that neuromarketing.”
	Integration with existing marketing research strategies	Expert 3: “the main applications are for understanding the decision-making process of professionals. . .” Expert 6: “It’s very important and it actually gives you power. . . helps companies and the industry create things that are more valuable for customers.” Expert 11: Neuromarketing provides valuable insights that might not be apparent to the consumer. . . It’s really important to use it. . .”
	Strategic decision making	Expert 8: “The power of neuromarketing in ad optimization, for example. . . It’s really extraordinary what you can do with that optimization.” Expert 9: “Neuromarketing techniques are able to verify the neurophysiological and behavioral responses of individuals. . . help to understand emotions.”

Source – authors’ own.

marketing research and transform the way businesses approach their market research strategies. To stay competitive, businesses need to integrate neuromarketing into their existing research methods.

Experts elucidate the *integration of neuromarketing with existing marketing research strategies* to clarify the application of neuromarketing. Expert 5 explicates the need to explore cognitive decision-making processes in the economic context. This exploration will assist businesses to comprehend the prices that consumers are willing to pay for their products. Herein, value becomes relevant as businesses can analyze their customers' perceived costs and benefits. Through these insights, businesses can offer a much better value proposition than their competitors. Expert 4 further delves into applying varied tools and techniques to capture subconscious insights. These insights facilitate refined adjustments to branding tactics, fostering a stronger emotional connection with target consumers. Moreover, this insight empowers the development of promotional initiatives that tap into subconscious desires, thereby enhancing customer experiences and leaving indelible, favorable impressions. Expert 8 accords with Expert 4 & 5 and opines that businesses can comprehend insights into behavior, emotional responses, attention span, and motivational triggers by measuring neural and physiological changes. Expert 6, on the other hand, emphasizes

the value aspect that by applying neuromarketing, businesses can craft high-value offerings for their clientele. From a divergent perspective, Expert 11 accentuates employing neuromarketing strategically to uncover critical insights that often remain opaque. In this manner, experts clarify the requirement of integrating neuromarketing with existing marketing research strategies. This highlights that this integration may help businesses make better strategic decisions than traditional methods.

Businesses must inevitably make strategic decisions about branding, promotional efforts, and customer experience. To illuminate the usage of neuromarketing in making strategic decisions, expert 10 articulates that there is a lack of scientific evidence about the preferences and decisions in traditional marketing research. Neuromarketers filled this void by employing neuroscience-backed scientific and profound methods. Expert 5 concurs with Expert 10 and divulges that neuromarketing can assist marketers in decoding brain functions and aligning these insights to refine marketing communications. Likewise, Expert 7 clarifies that neuromarketing insights are primarily aimed at catalyzing behavioral changes. These changes can guide marketers to adapt strategies during crucial behavioral shifts such as the COVID-19 pandemic. Experts 8 & 9 further extend the application of neuromarketing to optimize advertisements. The optimization includes refinement of messaging design and crafting captivating campaigns that

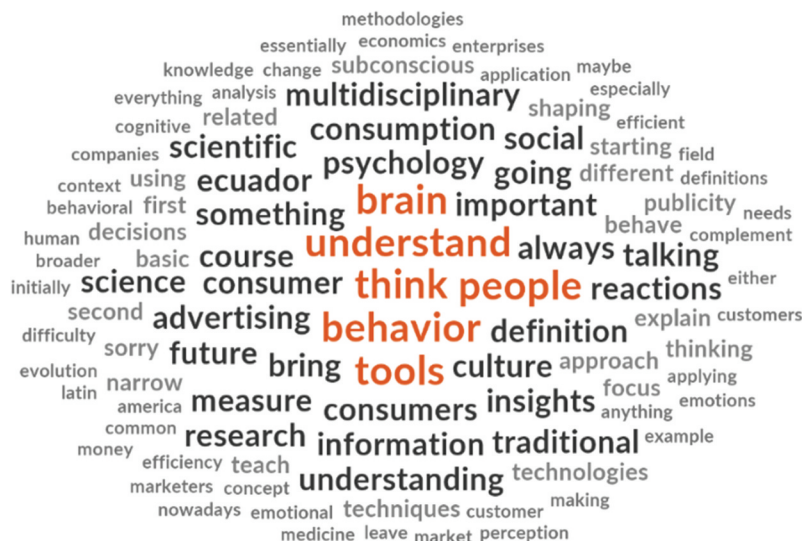


Figure 5. Word cloud for the theme "Present stance". Source – authors' own

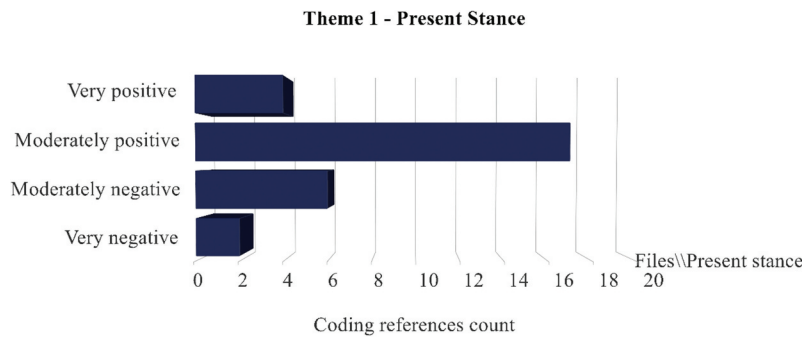


Figure 6. Sentiment analysis of theme “Present stance”. Source authors’ own.

could potentially impact the motivation and emotions of the customers. By doing so, businesses can evoke desired reactions, influence purchase decisions, and foster long-term relationships with their clientele. Expert 11 echoes the sentiment of prior experts and sheds more light on comprehending the conscious and subconscious spheres of the human mind. This comprehension will help businesses to provide superior value to their clients. Businesses can design advertising campaigns that are tailored to address rational, logical needs and tap into the black box of emotions, motivations, and aspirations. Consequently, businesses can make strategic decisions by employing neuromarketing and going beyond surface-level appeals, fathoming into the subconscious desires and fears to drive action.

In the meantime, when all of the interview excerpts pertaining to the theme of “*Present Stance*” were fed into NVivo to generate a word

cloud (Vignato et al. 2021), the words “brain,” “understand,” “think,” “people,” “behavior,” and “tools” were spotlighted (see Figure 5).

Similarly, to explore experts’ sentiment concerning the theme of “present stance,” the study utilizes auto-coding-based automated sentiment analysis using NVivo. The analysis reveals that experts are moderately positive (see Figure 6), which aligns with the aforementioned explanation of the theme and subthemes.

Difficult and expensive

Implementing neuromarketing presents challenges related to the *learning curve, complexity, and adaptations*. On this, expert 8 clarifies that the most challenging part of conducting neuromarketing studies is garnering holistic knowledge of multiple domains including economics, marketing, psychology, and medicine. This knowledge will help

Table 2. Sample excerpts for the theme “*Difficult and expensive*”.

Theme	Subthemes	Sample Excerpts
<i>Difficult and Expensive</i>	Learning curve, complexity, and adaptations	Expert 2: “you have to keep in notice that the region that you belong must comply with the legal and the and the privacy policies of that particular area because for Europe where rules are very strict.” Expert 3: “The problem here is that the marketing professionals’ organizations don’t know what the neuro marketing is for, they don’t see advantage of that.” Expert 7: “I’ve seen marketers who go, this is so simple, I can do it tomorrow, and then they get it wrong, and then they call neuromarketing doesn’t work. But you really need to build your experience base.” Expert 10: “The challenges in implementing neuromarketing include a learning curve for traditional marketers. . . economic considerations of large-scale adoption.”
	Economic Considerations	Expert 5: if you’re fine with the 70 to 80% quality of data, then you probably don’t need neuromarketing You’re in a field where you have, like large numbers and where the last 5% really makes a difference in the market. Expert 9: “The most reliable tools are expensive, such as magnetic resonance imaging and we also need a neurology professional for a more reliable analysis. However, the commercial EEG is not expensive.” Expert 4: Depending on what tools you use, if you look at fMRI, it’s very expensive to run a project. But if you look at implicit association, online facial coding, online eye tracking, these are not so expensive The pricing could be comparable to focus group regular survey, depending, of course, on the scale and on the depth of the projects. Expert 8: “Well, it depends on what we understand by expensive. . . the most expensive thing is to gain the knowledge about neuro marketing having the right people, having the employees that know how to work in neuromarketing. . .”

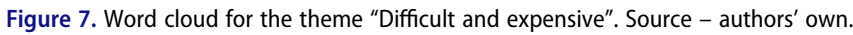
Source – authors’ own.

businesses gain a more thorough and accurate understanding of the factors influencing consumer behavior. In accord, Expert 9 emphasizes that mastery of neuromarketing tools alone is not enough. Understanding the complex interplay of psychological, cognitive, and emotional factors is essential to unlock the full potential. Undoubtedly, businesses need to employ neuromarketers with a solid background in consumer neuroscience, consumer sociology, consumer psychology, consumer anthropology, and marketing. In contrast, Expert 7 clarifies that businesses should be cautious of the misconception among marketers that neuromarketing is simple to execute (see Table 2). However, newcomers in marketing research lack the necessary experience to conduct thorough neuromarketing studies, which often results in unsuccessful outcomes. Building on this argument, Expert 11 clarifies that there is a learning curve and adaptation period for marketers who have been trained in traditional marketing methods. S(h)e suggests that these traditional marketers should understand and accept this change, as their adaptation period will be shorter and more manageable. Experts 12 and 10 echo the sentiments expressed by prior experts, emphasizing the importance of simplifying the learning curve required for mastering neuromarketing. Such simplification can enhance accessibility, enabling individuals in various fields, such as marketers, researchers, and businesses, to more effectively utilize neuromarketing. From a distinct perspective, expert 3 explains traditional marketers' and businesses' lack of cognizance regarding the usefulness and benefits of implementing neuromarketing. On the other hand, Expert 2 highlights an alternative impediment that hampers the implementation of neuromarketing, namely the ethical considerations. Neuromarketing studies necessitate adherence to strict ethical guidelines that must be observed before, during, and after data collection. The regulatory landscape for neuromarketing studies is particularly rigorous in Europe, where guidelines are more stringent than in other regions. The cost of adhering to these ethical considerations is substantial and necessitates an assessment of the economic considerations.

Another critical aspect in implementing neuromarketing is *economic considerations*. Wherein,

Expert 7 highlights the cost-effectiveness of neuromarketing compared to traditional marketing techniques. Additionally, (s)he delves into the potential utilization of priming to elicit distinct psychological biases. Priming entails presenting individuals with stimuli that unconsciously shape their subsequent thoughts and behaviors. Employing priming strategies in marketing can enable businesses to establish associations and elicit specific emotions or reactions from consumers. Expert 11 stresses the cost aspect and justifies that tools such as EEG, eye-tracking, and fMRI are not cheap for small and medium businesses. However, large businesses with their marketing departments and dedicated budgets can inexpensively access neuromarketing research. In most cases, these studies provide the highest return on the investment. In accord, expert 10 shares an example where s(h)e helped a brand make more money than they were doing with their traditional market research methods. Interestingly, the pricing of this study was similar to the traditional interview-based market research study. The expert suggests that businesses listen to the inner voice of consumers by employing neuromarketing, which will open a whole new world of possibilities. From a slightly divergent point, expert 2 expounds that the cost of a neuromarketing study will be contingent upon the number of participants involved. S(h)e believes that EEG and eye tracking are sufficient for basic neuromarketing studies, and the remainder depends on the marketing research budget. Experts 9&4 echo the sentiments of prior experts and clarify that tools like fMRI are substantially expensive and require a neurology professional for reliable analysis.

From a different standpoint, expert 3 elucidates that marketers may undertake fundamental neuromarketing research without relying on specialized equipment. Subsequently, s(h)e presents an online tool known as Sticky, a professional-grade eye-tracking software offered by Tobii. This tool is highly portable, as it can be used with desktop webcams, laptops, and tablets and offers the highest return on investment. In harmony, Expert 4 suggests integrating complementary online tools, such as implicit association testing and face coding, to augment the fundamental neuromarketing study. As for the cost, the expert explains that it will be contingent upon the extent and intricacy of the



Theme	Subthemes	Sample Excerpts
<i>Gimmick vs Insightful</i>	Value and efficacy	Expert 2: Neuromarketing allows you to get deeper into understanding why a person is reacting in a certain way. . . It helps to optimize decision-making . . . It's not only about what you are selling how you are selling; it's why they are buying."
		Expert 11: "certain industries, such as FMCG, retail, online trade banking, telecommunications, automotive, they do need normally the input in the marketing, investments, results plans"
	Misconceptions	Expert 4: "Well, they've been saying it's a fad, and it's going to go away since it started it is not a gimmick or a fad, because it would not have grown if it didn't provide real value to companies."
		Expert 9: "as people we are adapting and changing our preferences and behavior's. So neuromarketing has no tricks, it doesn't read minds either"
		Expert 11: "There's often a misconception about a 'push button' in the brain for selling, which is not accurate. . . It's our responsibility to educate consumers. . ."
	Perception	Expert 4: "In ten years, it has really changed the industry and has grown a lot."
		Expert 12: "Neuromarketing is considered the future of economic science. . . emphasizing its multidisciplinary approach and transformative impact on marketing research."

project. Expert 5 concurs with prior experts and emphasizes that not all businesses require neuromarketing. It will only prove beneficial if the business operates in an industry where the last 5% can significantly impact the market, particularly in a large market. In contrast, expert 8 explicates that acquiring expertise in neuromarketing is the

Meanwhile, when all the interview excerpts concerning the theme of “*Difficult and Expensive*”

were fed into NVivo to generate a word cloud (Vignato et al. 2021), the words “brand,” “investments,” “depends,” “expensive,” “prices,” “consumers,” and “tools” were underscored (see Figure 7).

Likewise, to explore experts’ sentiment about the theme of “*Difficult and Expensive*,” the study utilizes auto-coding-based automated sentiment analysis using NVivo. The analysis reveals that experts are moderately positive (see Figure 8), which aligns with the aforementioned explanation of themes and subthemes.

Gimmick and insightful

Businesses are unsure whether neuromarketing is a mere gimmick or a valuable tool for marketing research. To provide clarity, experts have offered insights into the *value and efficacy* of neuromarketing. Herein, expert 7 highlights that neuromarketing is not merely a gimmick but rather a scientifically grounded method that clarifies the intricate workings of the brain, specifically focusing on the cognitive processes that underlie decision-making. Building upon these insights, expert 2 explains that neuromarketing allows for a more in-depth understanding of the reasons behind people’s behavior (see Table 3). S(h)e stresses that the focus should not solely be on what businesses sell but rather on identifying why people make purchases. Taking a different approach, expert 3 emphasizes the shortcomings of traditional marketing research techniques, asserting that consumers often do not divulge the whole truth. Consequently, neuromarketing presents a complementary perspective that offers additional insights beyond the scope of traditional marketing research methods. This approach, when employed, can provide a more comprehensive understanding of consumer behavior and preferences. Expert 8 adds to the discussion by illustrating the application of neuromarketing to enhance the effectiveness of advertisements. Through this application, businesses can gain insights into the emotional responses elicited by their advertisements and identify the areas of the advertisement that capture the most attention from the audience. With this information, businesses can optimize their advertisements to evoke specific emotions at strategic points and ensure that the key message receives maximum attention. Thus, neuromarketing can

help businesses create more effective advertisements that resonate with their target audience. Further, expert 11 points out that neuromarketing can offer significant insights to businesses in various sectors, including fast-moving consumer goods (FMCG), retail, online banking, telecommunications, and automotive. By doing so, neuromarketing insights possess the potential to revolutionize marketing approaches and enhance customer engagement.

While neuromarketing’s transformative potential is indisputable, it is essential to dispel the *misconceptions* that could impede its profound impact. To that end, Expert 9 emphasizes that neuromarketing is not focused on deception or mind reading. Instead, it provides valuable insights into how individuals’ preferences and behaviors may evolve. Expert 11 highlights another common misconception, which is the notion that there is a “push button” in the brain that businesses can use to increase sales. This notion is entirely false, and the expert recommends educating consumers on the true nature of neuromarketing and what it cannot do.

According to Expert 5, neuromarketing faces a significant challenge: it lacks a protected label. Unfortunately, the term is often misused to promote unfounded and ineffective solutions, undermining the field’s credibility. Due to this, it is crucial to collaborate with established professionals in the field and to exercise caution when evaluating claims made by unverified consultants. Expert 4 echoes the standpoint of prior experts and disputes the notion that neuromarketing is merely a fad. S(h)e asserted that industry’s continuous growth and adoption of neuromarketing demonstrates its genuine value to businesses, further legitimizing neuromarketing. Consequently, neuromarketers must educate businesses and consumers to alter their perception of neuromarketing, avoid unscrupulous consultants, and collaborate with reputable neuromarketing professionals.

Misconceptions regarding neuromarketing for marketing research often arise due to how individuals and businesses perceive it. It is crucial to transform this negative perception into a positive one. Expert 11 emphasizes that it is the responsibility of experts to shape the *perception* of neuromarketing. (S)he suggests that industry researchers, scientists, and practitioners must take responsibility and educate consumers and businesses. In contrast, expert 9



In the interim, when all of the interview excerpts pertaining to the theme of “*Gimmick or Insightful*” were fed into NVivo to generate a word cloud (Vignato et al. 2021), the words “efficiency,” “Insights,” “results,” “ethical,” “design,” and “changes” were spotlighted (see Figure 9).

Discussion

The study aimed to explore the present stance of neuromarketing and ascertain whether it is a gimmicky, expensive, and difficult approach or

a valuable and insightful market research method, specifically in the aftermath of the pandemic.

Unlike previous research that has relied on secondary data to elucidate the present stance of neuromarketing and its pertinent misconceptions (Agarwal and Dutta 2015; Bhardwaj et al. 2023; Fugate 2007; Kajla et al. 2023; Lim 2018a, 2018b; Rawnaque et al. 2020) this study took the initiative to procure primary qualitative data through in-depth interviews to provide firsthand insights into what experts in the market research industry think about the present stance of neuromarketing research and its pertinent misconceptions.

Despite the numerous studies in the existing literature that provide clarity on various aspects of neuromarketing like ethics (Stanton, Sinnott-Armstrong, and Huettel 2016), new frontiers (Mileti, Guido, and Prete 2016), neuroscience-inspired design (Spence 2016), pricing psychology (Boz, Arslan, and Koç 2017), Gamification (Behl et al. 2023), communication research (Casado-Aranda et al. 2023), and programmatic advertising (Bajaj, Syed, and Singh 2023). It is still not clear whether neuromarketing is a difficult and expensive endeavor. The present study addresses this gap by highlighting the challenges associated with neuromarketing, which requires knowledge and expertise from multiple domains. Due to this, market research companies and third-party consultants typically charge more for neuromarketing studies than traditional market research studies. Nevertheless, the COVID-19 pandemic disrupted and led to the development of online-based neuromarketing tools and techniques that are more affordable, easier to deploy, and offer automated analysis. These developments made neuromarketing more accessible to businesses with limited marketing budgets.

The use of neuromarketing in marketing research remains unclear to many businesses, with some considering it a mere gimmick while others view it as a valuable tool. Previous studies provided profound insights into the existing literature (See - Ariely and Berns 2010; Bhardwaj et al. 2023; Casado-Aranda et al. 2023; Levallois, Smidts, and Wouters 2019). However, there is a dire need to address the misconceptions and educate businesses and consumers. This study underscores businesses' need to collaborate with reputable

professionals and avoid bogus neuromarketing consultants. Furthermore, the study emphasizes that neuromarketers have the potential to shape the perception of their field and play a pivotal role in devising more potent marketing strategies.

Theoretical implications

This study's primary focus is on the present stance of neuromarketing and its pertinent misconceptions, but it nonetheless provides theoretical contributions that add to the body of knowledge. It achieves this by offering three significant contributions to the existing literature.

First, the present stance of neuromarketing focuses on uncovering the decision-making processes that underlie business transactions, reducing friction, and enhancing communication. Experts emphasize the potential for neuromarketing to transform marketing research, optimize advertising placement, and improve the value proposition. By incorporating neuromarketing into existing marketing research strategies, businesses can achieve enhanced branding, build emotional connections with customers, and make more informed strategic decisions. Neuromarketing provides insights beyond surface-level analysis, delving into customers' subconscious to drive action and offering deeper strategic insights in a competitive market environment. These insights build upon previous knowledge of the present state of neuromarketing, primarily focusing on secondary data (Bhardwaj et al. 2023; Kajla et al. 2023; Rawnaque et al. 2020).

Second, major challenges businesses face while considering neuromarketing include gaining profound knowledge about economics, psychology, marketing, and neuroscience. Businesses also need to consider the ethical implications of neuromarketing studies. These complexities affect the adoption of neuromarketing among businesses. On the other hand, the cost of advanced tools like fMRI is very high and emphasizes strategic investment for notable returns in the long run. Nevertheless, the COVID-19 pandemic caused significant disruption to the market for neuromarketing tools, leading to the emergence of online-based products that are readily available and frequently include automated analytic capabilities. Similarly,

the primary obstacle is to cultivate consciousness among businesses regarding the uses of neuromarketing. These insights extend prior literature by highlighting the need for specialized expertise, the necessity for considering ethical considerations (Murphy, Illes, and Reiner 2008; Stanton, Sinnott-Armstrong, and Huettel 2016), and the need for cost-effective solutions (Agarwal and Dutta 2015; Casado-Aranda et al. 2023).

Third, there are lots of discussions among marketing scholars surrounding whether neuromarketing is a mere gimmick or an insightful method for marketing research. This study sheds light on the scientific grounding of neuromarketing by accessing the cognitive processes behind consumer decision-making. This notion clarifies that neuromarketing has moved beyond mere gimmickry and aligns with existing literature stressing the need for deeper customer insights (Bhardwaj et al. 2023; Stanton, Sinnott-Armstrong, and Huettel 2016). Neuromarketing also complements traditional market research methods, filling the gaps where customers may not fully disclose their intentions. Integrating neuromarketing with existing methods strengthens its credibility, resonating with past calls for more profound and enriched marketing research insights (Golder et al. 2022; Meyerding and Mehlhose 2020). Hence, the present study extends the extant literature by highlighting the transformative impact neuromarketing could have on marketing research (Ariely and Berns 2010; Roberts 2022). Besides this, the contribution of this study also aligns with the prior discussions on evolving methodologies in consumer behavior research (Han, Zhou, and Allaway 2018; Lim et al. 2022; Malter et al. 2020).

Managerial implications

With its data derived from neuromarketing experts in the marketing research industry, the key stakeholders that would benefit from the study's insights would be marketing research companies, businesses, and independent neuromarketers who plan to conduct neuromarketing studies. Concerning this, the present study contributes to practice in three significant ways.

Firstly, while exploring the present stance, the study expounds that neuromarketing facilitates in-

depth comprehension of consumer decision-making processes, enabling bespoke marketing strategies and enhanced product positioning. Neuromarketing helps reduce friction in the purchase processes by identifying and addressing pain points in the customer journey and nurturing brand loyalty. Furthermore, it aids in optimizing media placement through neuroscientific insights to target specific customer segments effectively. Businesses can refine their branding tactics by resonating their brand messages with the subconscious penchants of the customers. Businesses can tap into consumers' emotional responses and refine marketing strategies to build long-lasting brand-customer relationships. Through the integration of emotional responses, businesses can further augment their value propositions by customizing their product offerings to match the subconscious desires of their customers. Thereupon, businesses can make informed strategic decisions, anticipate market trends, and drive sustainable growth in today's competitive landscape.

Secondly, the study reveals that effectively utilizing neuromarketing involves an initial strategic investment and adherence to strict ethical norms, thereby clarifying that neuromarketing is both challenging and costly. So, businesses must allocate substantial resources to hire neuromarketing experts with profound consumer neuroscience knowledge. Businesses must also understand and comply with stringent regional-specific ethical regulations while conducting neuromarketing studies, especially in Europe. Likewise, marketing research companies should simplify neuromarketing research processes and offer online-based neuromarketing tools that can be tailored to the clientele's needs. These companies must also invest in regular staff training to enhance their expertise concerning the nascent developments in the neuromarketing landscape. Such training will ensure that marketing research companies can provide the latest neuromarketing-based solutions and sustain themselves in the competitive market. On the other hand, independent neuromarketers can play a critical role by offering flexible solutions to businesses of all sizes. However, it will be difficult for independent neuromarketers to master all available neuromarketing tools and techniques, so the present study suggests that independent neuromarketers collaborate with other neuromarketers. This collaboration allows

both parties to share resources, know-how, and clients. In this way, independent neuromarketers can adapt and ensure relevance during the fluctuating market dynamics.

Thirdly, businesses have a misconception that neuromarketing is a mere gimmick and cannot provide valuable insights. This study shatters all these misconceptions by clarifying that neuromarketing offers scientifically grounded insights into consumer behavior. These insights embedded deep into the subconscious mind of consumers are often missed while conducting traditional marketing research studies. Likewise, bogus neuromarketing consultants also tarnish the image of neuromarketing by providing solutions that do not work. So, businesses are suggested to thoroughly evaluate the reliability and validity claims of the neuromarketing solutions. They should always work with reputable marketing research companies or independent neuromarketing experts with a proven track record of success. Marketing research companies, on the other hand, should integrate neuromarketing studies with their existing methodologies. Doing so will enhance the reliability and validity of the research. Hence, marketing research companies should partner with reputable neuromarketing practitioners and academicians to stay competitive. Through this, these companies can conduct joint research projects and leverage their expertise to conduct large-scale neuromarketing studies systematically. Marketing research companies could bundle neuromarketing studies with traditional marketing research studies as a trial. If businesses get some additional impactful insights during the trial period, they could opt for comprehensive neuromarketing studies. The trial will be an excellent opportunity to educate businesses and raise awareness about the additional benefits they may reap by using neuromarketing. In the meantime, independent neuromarketing consultants and marketing research companies should verify the validity and reliability of their solutions. If these solutions offer practical and compelling insights to businesses, it will foster trust and increase the probability of drawing repeat clients. Independent consultants should always collaborate with academicians and marketing research companies to further bolster the credibility of their claims. On top of that, they

should keep abreast with the latest happenings in the field of neuromarketing by participating in events, seminars, conferences, and courses.

Conclusion

Key takeaways

The present study elucidated the stance of neuromarketing and dispelled a few misconceptions. Through primary qualitative interviews with neuromarketing experts from eleven countries, the study clarifies that neuromarketing can facilitate the understanding of subconscious consumer insights, optimize advertising campaigns, and enhance brand communication strategies. However, the study also highlights the challenges businesses face when implementing neuromarketing, such as the need for multidisciplinary expertise and the high initial investment required for hardware, software, and hiring experts. These challenges serve as significant barriers to entry for many businesses looking to venture into neuromarketing. Nevertheless, online-based neuromarketing tools and techniques that emerged during the COVID-19 pandemic have made neuromarketing more affordable and accessible for businesses with limited marketing budgets. This study also emphasizes the importance of collaborating with reputable neuromarketing professionals and avoiding bogus consultants who sell hope in the name of neuromarketing. Additionally, the study suggests integrating neuromarketing solutions with traditional marketing research methods to enhance credibility. The study offers practical insights to businesses, marketing research companies, and independent neuromarketing consultants to help them overcome implementation difficulties, optimize their resources, and capitalize on the potential of neuromarketing to remain competitive.

Limitations and future research directions

Although making novel contributions, the study is circumscribed by three distinct limitations that point toward potential areas for future exploration.

First, this study relies on a limited number of experts to generate qualitative insights, which may restrict the generalizability of the findings. Despite

the valuable insights provided by these experts, a larger and more diverse sample of experts could potentially yield more insights. A diverse sample could be beneficial by capturing insights from various experts with different backgrounds, experiences, and roles within the industry. Therefore, future research could consider employing experts from different industries and sectors with varying seniority levels and considering more diverse geographical locations.

Second, despite the valuable insights it provides, this qualitative study, which relies on experts' opinions, may encounter issues related to subjectivity and bias. To address these issues, it is recommended that quantitative measures be incorporated into the study or that interviews be triangulated through focus groups or website scraping. These measures would offer an objective lens to validate and complement the in-depth interviews. Additionally, incorporating the perspectives of consumers, businesses, market research companies, or other relevant stakeholders could enhance the study's credibility and reduce potential individual bias. Future research might combine qualitative and quantitative methods or expand the depth of study by employing multiple qualitative methods, as mentioned above.

Third, the present research delves into the advent of online-based neuromarketing tools and their utility in the post-pandemic era. However, a more in-depth examination of these tools and techniques and a comparison to traditional offline neuromarketing strategies remains lacking. Given the potential influence of these online tools on marketing tactics, future research should undertake a more comprehensive investigation of both online and offline neuromarketing tools. This examination could encompass various online neuromarketing tools and techniques and assess their effectiveness, efficiency, and cost compared to their offline counterparts. Additionally, future research should evaluate the merits and limitations of these tools and techniques in diverse contexts, such as predicting consumer behavior, interpreting emotional responses, testing brand elements, improving user experience, and optimizing product and packaging design. Moreover, future studies could analyze case studies highlighting the outcomes of online-based neuromarketing tools in contrast to traditional offline tools to provide practical insights.

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