

The influence of Consumer Brain Science strategies on consumer decision-making processes

Igwe, Peace

Department of Marketing, University of Port Harcourt, Rivers State, Nigeria.

(ORCID: <https://orcid.org/0009-0005-5565-9392>)

Hathey, Esther Chinenye

(School of graduate studies, University of Port Harcourt).

&

Ukoro, Chukwuma Joshua

(School of graduate studies, University of Port Harcourt).

Abstract

This study examines the effects of Consumer Brain Science strategies on consumer decision-making processes, specifically on the assessment of alternatives and final purchasing decisions, as well as their overall effect on sales performance. Utilising Kahneman's Dual-Process Theory, the study investigated the influence of Consumer Brain Science tactics on subconscious preferences during the alternative appraisal phase and evaluated their effects on final purchasing choices. The theoretical framework employed in the research combined secondary data Brain-scientific researches involving Functional Magnetic Resonance Imaging, EEG and eye-tracking) and consumer behaviour literature. It investigated the impact of emotional and cognitive triggers on the way people purchase items by integrating concepts in marketing, psychology and Brain-science. The findings indicate that Consumer Brain Science Influences intuitive, emotional thinking to a large extent, through sensory branding, emotional narratives and priming techniques. It is then easy to compare the advantages and disadvantages of various options. Subconscious decision making through reward related activity in the nucleus accumbens and differences in beta waves hasten the process of decision making. However, conscious variables like price, quality and trust still play a big role in the ultimate choice to buy anything, showing how intuitive and logical thinking work together. Ethical issues come up when it comes to the possible manipulation of consumer autonomy because Consumer Brain Science does not work the same way in all situations. The research found that Consumer Brain Science significantly influences the first phases of decision-making by activating subconscious cognitive processes, hence providing empirical validation for the Dual-Process Theory. It successfully drives customer preferences, but rational evaluation limits its effect on ultimate purchase decisions. This indicates the collaboration between Systems 1 and 2. In a practical perspective, marketers can increase interaction with the application of Consumer Brain Science strategies such as emotional appeal and the personalisation of AI. However, to prevent human beings, the governments must establish rules of ethics to avoid exploitation among man. In theory, the research encourages the

interdisciplinary approach as Brain-science and consumer psychology are related because they need to find hybrid models that would integrate Brain-logical evidence with behavioural indicators. Future studies should focus on the empirical verification through Brain-imaging tests, application of Consumer Brain Science to sectors such as e-commerce and longitudinal research to assess the long-lasting effects and ethical consequences of Consumer Brain Science.

Keywords:

Brain-Marketing, Consumer Decision-making, Evaluation of Alternatives, Purchase Decision

Introduction

Decision making as a consumer is a major aspect of marketing and it is highly significant to businesses. It includes the steps and mental processes that affect customers as they figure out what they need, obtain information, weigh their options, make a purchase and then decide if they are happy with it (Bekimbetova, 2024). Businesses may make more money and keep customers happier by learning about these processes and using that knowledge to improve their marketing (Bekimbetova, 2024). An appreciable example lies in the factors; attitude, perceived risk and trust being able to reasonably influence an individual's decision to purchase a product or service. It is therefore pertinent for firms to establish trust and lower perceived risks among prospective customers (Siraj et al., 2024). Additionally, Bekimbetova (2024) points out that both internal and external factors have been found to impact purchase decisions. Elements like demographics and mental state account for the later, while social and environmental consequences account for the former. In contrast, Gurtner, Gurtner, Laub, Zuber, & Von Däniken (2024) found that consumers' sentiments of helplessness are reduced when digital technologies expand their access to other sources of guidance. Since customers can't make educated purchases without the information that businesses can provide, it is imperative that companies become digital experts.

Everyone from businesses to marketers puts a premium on the customer decision-making process, which encompasses weighing options and ultimately making a purchase. When making a purchase decision, consumers take many things into account, such as their level of brand awareness, the product's popularity and price (Siraj et al., 2024). This is a critical phase because it influences the final purchasing decision. These details are included in the marketing strategies of successful companies. Reflecting on the Siraj et al. (2024), it is obvious that there exists a gender difference and being price and fashion conscious makes a big difference in the purchases made by men and women. Companies must draft target marketing strategies where diversity is considered in case they desire to draw a diverse audience.

In the consumers' purchase evaluation process, decision making stands as the final and essential stage. Several factors act as moderators to this process including individual preferences, risk perception and societal pressures (Bekimbetova, 2024). It was cited that customers exude safety in making purchases when businesses offer trust and provide reliable information. On their part, businesses can aid customers by transparently fulfilling consumer requirements. By improving their marketing mix, companies can benefit from consumers' decision-making process. Gurtner et al. (2024) suggests that proper identification of the factors that customers find most appealing can reasonably enhance the customer service, marketing and product quality of businesses. In order to

understand the methods by which effective advertising strategies influence online customers; institutions can utilise Consumer Brain Science technology Ismajli, Ziberi & Metushi, (2022). This technology employs concepts of Brain-science, takes the anatomy of the brain and physiological effects on consumer behaviour into account to influence individuals' purchasing decisions. Alsharif, Salleh, Abdullah, Khraiwish, & Ashaari (2023) and Bhardwaj et al. (2024) posit that Consumer Brain Science technology exceeds traditional marketing strategies by directly measuring physiological responses and brain activity. It provides an advantage for businesses, empowering them to meet customer preferences by improve their marketing which ultimately increases customer engagement Ghosh & Kumar, (2024); Panwar, Bhargava, Bohara, & Chaudhary, (2024). All of these are made possible by appealing to the emotions and thoughts of these customers. Research suggests that it is necessary to understand the emotional aspect of human nature for effective marketing. Jiménez-Marín, Bellido-Pérez, & López-Cortés, (2019) and Siddique, Shamim, Nawaz, & Abid, (2023) allude that emotional experiences precede rational reasoning in marketing, aimed at influencing purchase decision. When combined with traditional marketing strategies, Consumer Brain Science allows deeper understanding of consumer's emotions and thoughts (Ghosh & Kumar, 2024; Panwar et al., 2024). The end result is however, of mutual benefit for both businesses and consumers.

This study is essential in bridging the gap between Consumer Brain Science outcomes and its impact on consumer engagement. The research takes into account how conventional marketing strategies ignore the influence of subconscious factors and the complex nature of consumer decision making in the digital age. This paper focused on the Consumer Brain Science strategy in order to give a deeper insight on the psychological and emotional concepts that influence consumer decisions. Moreover, the results will be useful to companies to increase their engagement, brand loyalty and marketing. This piece of work has a great value in both the practical and theoretical aspects. This research yields significant insights into the interaction between Consumer Brain Science and decision-making processes, particularly in the appraisal of alternatives and the purchase choice, benefiting key stakeholders such as businesses, marketers, politicians and scholars.

Literature Review

Theoretical Framework

As a concept, Consumer Brain Science has provided insight into customer behaviour as a function of success in sales. These insights have emerged as a result of integrating Brain-science and marketing. In examining Kahneman's (2011) Dual-Process Theory Consumer Brain Science accounts that the interaction between System 2 (analytical thinking) and System 1 (intuitive thinking) greatly influences customer decisions. More than 95% of these decisions are made subconsciously and have been attributed to the emotional reaction or system 2 response of a customer to marketing stimuli (García, Quiroga Ríos, Rodríguez Chamorro, Becerra Rojas, Arévalo Rodríguez, Sánchez Yarleque, & Garcia Arismendiz, (2024).

Several marketing theories have built on Brain-science to account for ways by which consumers view brand positioning. Plassmann et al. (2012) and Anderson et al. (2023) studied the role of Functional Magnetic Resonance Imaging (fMRI) in marketing to find that prominent brands

stimulate the ventromedial prefrontal cortex to influence consumers' value judgement and emotion processing. These indicate the possible existence of neural circuits that impact likelihood of purchase and sales conversion. Research in Electroencephalogram (EEG) points out that items that stimulate positive emotion have a 32% chance of being purchased over other products. Furthermore, in understanding the impact of Consumer Brain Science on sales, Damasio (1994) combines the Dual-Process Theory with Somatic Marker Hypothesis. This context posits that physiological signals prompted by emotional response to marketing stimuli tend to influence decisions through conscious or unconscious mechanisms. In tandem with this position, it was found that emotional appealing ads result in higher sales, up to 2.4 times over ads that depend on factual reasoning (Jimenez-Marin et al., 2019; Panwar et al., 2024).

Conceptual Framework

Brain-Marketing

Using research in the Brain-sciences to infer customers' subconscious behaviours, Consumer Brain Science is a subset of traditional marketing. In a bid to measure the opinion of the consumer, the traditional marketer often uses such tactics as focus groups, surveys and self-reporting statistics. Consumer Brain Science makes use of the state-of-the-art biometric and Brain-imaging technology in understanding consumer responses to advertisement messages. Emotions, cognitive biases and unconscious brain processes greatly influence people's decision-making, according to the basic concept of Consumer Brain Science (Mathaisel & Comm, 2021). With our newfound knowledge of the brain's inner workings, advertising strategies may soon be able to appeal to customers' desires while simultaneously lifting their spirits. This may lead to better product creation, advertising and communication with customers (Alsharif et al., 2023) as stated by them.

By avoiding questions about memory recall and social desirability bias, Consumer Brain Science provides a more comprehensive and objective view of consumer reactions compared to self-reporting methods (Allassaf & Szalay, 2022).

Consumer Brain Science is one of the main functions which measure the emotional and cognitive reactions of consumers to commercial activities in real-time. The general assumption about consumers is that they are rational creatures who carefully consider their alternatives before making a purchase (Ajzen, 1991; Petty & Cacioppa, 1986). Consumer Brain Science experiments conclude that psychological and emotional issues are important in customer decision-making (Kahneman & Tversky, 1979). Two important brain activities that can affect the decision-making process of consumers while making a purchase have been studied by Klassmann et al. (2008) and Yoon et al. (2006) through the use of functional magnetic resonance imaging (fMRI) and electroencephalography (EEG) respectively are the amygdala, which processes emotions and the nucleus accumbens, which is related to anticipation of the reward. There are a lot of potential applications for Consumer Brain Science in areas such as advertising, the purchasing process, pricing strategies and brand positioning. Reason being, it enables businesses to cater their ads to the exact preferences of their target audience (Anderson et al., 2023). Brain-science can help marketers improve the experiences of their consumers, gain greater engagement and drive higher revenues when insights are applied to their tactics.

Decision-Making

There are a number of psychological and behavioural stages that make up the consumer decision-making process and it starts with the identification of need and then proceeds to the process of collecting information, screening the alternatives and finally purchase. According to the description of this process, Bekimbetova (2024) defines five steps, which are problem identification, gathering information, assessing options, making a purchase and following up of the purchase. Though digitisation has made many things easier, recent research shows that people's decision-making processes have shifted due to the prevalence of social media, user reviews and other forms of online information. Researchers have showed that customers today have less of a voice but more power than in the past, all because of technology improvements. They are both empowered and exhausted by the constant stream of information, which has forced people to make decisions at an alarming rate (Gurtner et al., 2024). A lack of clarity in the buying process and the abundance of digital product information may cause consumers to second-guess their choices or feel remorse after the fact (Gurtner et al., 2024).

The greater influence that AI and social media have on consumers' decision-making, the more deep the disruption to the purchasing process has become. Users turn to the recommendations of friends and influencers and also algorithm-based content and reviews prior to purchasing it (Siraj et al., 2024). The elements that influence the reaction and the level of satisfaction of online shoppers are perceived risk, trust, web design and social influence considerably (Jothimani et al., 2023). A number of scholars have hypothesised that recommendation algorithms and other digital decision-making tools might make or break the decision-making process (Gurtner et al., 2024). Gurtner et al. (2024) argued that companies should focus on dealing with decision fatigue and digital touchpoints. Achieving this goal requires well-planned and tailored purchasing experiences. Customers won't get bored or overwhelmed by all the selections because of this.

Brain-Marketing and Evaluation of Alternatives

Scientists studying consumer behaviour have continually argued on the success of Consumer Brain Science in influencing people's evaluation of alternatives while making decisions. In contrast to traditional surveys, Consumer Brain Science techniques such as electroencephalography (EEG) and functional magnetic resonance imaging (fMRI) might reveal latent preferences, which, according to proponents of these technologies, can improve the perception of available options. Recent Brain-imaging research has revealed that emotional cues, such beautifully designed packaging or endorsements from famous people, may influence customers' subconscious preferences. Among these regions, the nucleus accumbens is implicated in reward processing (Ouzir et al., 2024). Studies have shown that emotionally charged advertising increase beta wave activity, which is associated with attentiveness, supporting this notion. Khondakar et al. (2024) found that when people lessen the time they spend thinking about their options, they are able to make decisions more rapidly. With this information in hand, marketers can subtly influence consumers' choices without appealing to their rational rationale. Consumer Brain Science using AI improves upon it by tailoring choices and material to each individual's implicit biases (Harris & Armstrong, 2019). As an example, dynamic pricing methods that use EEG data could revolutionise comparison methods by highlighting differences in perceived worth.

However, scholars argue that the impact of Consumer Brain Science on consumers' decision-making processes is overstated. Although Brain-imaging can uncover neural bases for preferences, this method is argued not to be foolproof when it comes to actual purchases. Subconscious triggers may increase focus without necessarily impacting final decisions. Ismajli et al. (2022) found that traditional factors, such as price and product quality, have a substantial impact on conscious evaluation. In fact, 75% of respondents said that quality is more important than Consumer Brain Science signals, like container colour. Moreover, ethical issues emerge about the manipulation of subconscious processes. Using fMRI to take advantage of people's emotional weaknesses, such linking things to happiness, might hurt consumer autonomy and trust if people think it's exploitative (Morin, 2011). This duality underscores a significant gap: whereas Consumer Brain Science clarifies the brain processing of choices, it may not forecast which alternatives will eventually be chosen, as cultural, economic and environmental factors influence results.

The mixed empirical evidence emphasises the necessity for more inquiry. Ouzir et al. (2024) categorised “like” and “dislike” preferences by EEG; however, their approach did not consider post-purchase contentment, thus leaving unresolved the relationship between Consumer Brain Science-driven decisions and long-term customer pleasure. Moreover, the majority of research concentrate on artificial laboratory environments, which constrains their applicability to real-world contexts characterised by numerous distractions and conflicting inputs. It is essential for emerging research to combine Consumer Brain Science data with conventional metrics of behaviour to analyse how subconscious priming persists across various contexts of decision making.

Brain-Marketing and Making a Purchase Decision

The concept of Consumer Brain Science has emerged as a new model to influence the decision of consumers during purchasing. This facet largely depends on the application Brain-science to establish hidden patterns and understand neural reactions to marketing attempts. Consumer Brain Science employs recent technologies such as eye tracking, EEG and fMRI to identify emotional and cognitive cues that conventional survey methods frequently miss (Kiran & Prabhakar, 2021). Consumer Brain Science is a powerful force in altering consumer behaviour because it uses people's intrinsic reflexes to influence how brands, ads and product characteristics are presented. This is especially true when considering how fast and unconscious people make decisions. Emotional intelligence (EI) enables brands to develop messages that appeal to consumers' moods, assumptions and worldviews in Consumer Brain Science, for example. Customers are thus more likely to buy (Pop & Iorga, 2013).

Despite Consumer Brain Science's promising future, ethics, consumer manipulation and trust are long-term concerns. Sceptics argue that while Consumer Brain Science has the potential to enhance marketing strategies, it also carries the risk of capitalising on cognitive biases—in this case, encouraging impulsive purchases rather than rational ones (Singh, 2020). Moreover, the amalgamation of Consumer Brain Science with big data analytics and artificial intelligence, albeit improving prediction accuracy, presents challenges related to data privacy and customer autonomy (Kiran & Prabhakar, 2021). Another difficulty is that we do not know how Consumer Brain Science will affect customer trust and sustainability in the long run. Studies have

demonstrated that emotionally engaged customers display increased brand loyalty; nevertheless, the durability of Consumer Brain Science-driven engagement over time necessitates more empirical examination (Nilashi, & Yadegaridehkordi, 2020).

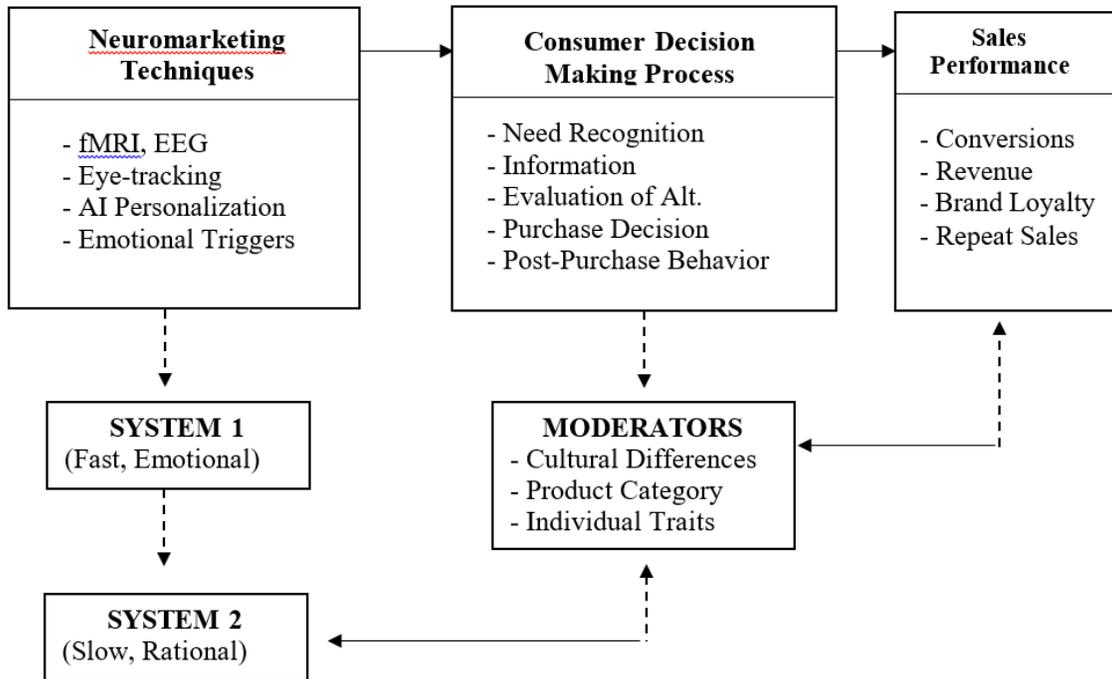


Figure 1: Conceptual Model of the Interrelationship among Consumer Brain Science, Consumer Decision-Making and Sales Performance (Researchers’ Conceptualisation, 2025)

Figure 1 depicts the hypothesised mechanism by which Consumer Brain Science approaches influence sales performance, facilitated by the customer decision-making process and influenced by contextual and individual variables. Consumer Brain Science interventions like fMRI, EEG, eye-tracking, AI-driven personalisation and emotional stimuli, primarily trigger System 1 processing, which is fast, intuitive and emotive. This activation affects how people think and behave at important points in the decision-making process, including as recognising a need, looking for information, weighing options, making a purchase and acting after the purchase.

System 1 processing, which is more intuitive and based on feelings, is in charge of the early phases. However, System 2 processing, which is more careful and analytical, is also involved, especially in the latter stages like the purchase choice. This intensifies the first physiological responses. Conversion rates, income generation, customer loyalty and repeat purchases are some metrics that may be used to evaluate the efficacy of various processes in sales. The model also accounts for potential moderators of the relationship between customer decision-making and sales success, such as cultural background, product category and personal attributes. This model collectively offers a Brain psychological framework for comprehending the conversion of marketing inputs into consumer behaviours and economic results.

Consumer Brain Science Techniques and their Effect on Sales

Various Brain-scientific techniques have been demonstrated to influence sales figures and modern Consumer Brain Science employs a broad variety of these techniques to understand and influence consumers' purchasing behaviours. Items placed in the "golden triangle" of visual attention (top-left to centre-right of displays) sell 42% more than those placed in other positions, according to eye-tracking research (Peng et al., 2023). This finding has revolutionised retail marketing, as major retailers have seen a 15-20% increase in sales after improving product placement using eye-tracking data (Bhardwaj et al., 2024).

Technology that uses facial coding to detect micro expressions in response to marketing stimuli has shown to be quite beneficial for ad testing. Ads that make people grin genuinely (Duchenne) for at least 50% of their duration have 37% better recall and 28% better buy intent, which directly leads to better sales performance (Alsharif et al., 2023). Galvanic skin response (GSR) tests show that ads that create the right amount of arousal (not too high or too low) lead to 2.1 times higher sales conversions than ads that do not find this balance (Dwivedi & Sharma, 2024).

Combining AI with traditional Consumer Brain Science technologies has opened up new ways to improve sales. AI-powered Consumer Brain Science solutions that integrate EEG data with machine learning algorithms can anticipate buy intent with 89% accuracy. This lets marketers change their ads in real time, which has been found to boost sales by 18–25% (Harris & Armstrong, 2019; Kiran & Prabhakar, 2021). These new technologies have made Consumer Brain Science an essential tool for businesses who want to make sales.

The Function of Consumer Brain Science in Consumer Decision-Making Processes

Digital technology and Consumer Brain Science insights have completely changed the way people make decisions about what to buy. In the past, it was thought of as a linear process that went from recognising a need to evaluating the purchase. Modern models acknowledge the non-linear, iterative characteristics of consumer decision-making in the current intricate economy (Gurtner et al., 2024). Consumer Brain Science interventions can have a big effect on the chances of making a purchase and the final sales results at every step. Consumer Brain Science study shows that subconscious priming through focused content can create fake wants that boost category sales by 15–30% during the need recognition phase (Morin, 2011; Ouzir et al., 2024). For example, showing people food-related pictures for as little as 13 milliseconds (below their conscious awareness) has been proven to enhance snack sales by 22% in convenience stores (Ghanibari et al., 2024).

Digital Consumer Brain Science has changed the information search stage in a big way. Research utilising EEG during online search activities indicates that customers allocate 47% more time to search results that generate elevated theta wave activity, which is linked to curiosity and engagement. This leads in increased click-through rates and eventual purchases (Jothimani et al., 2023). Siddique et al. (2023) found that a 35% increase in conversion rate is directly correlated with the fact that individuals spend 2.3 times more time looking at visually harmonious internet pages.

During the critical assessment of alternatives phase, fMRI studies indicate that product comparisons engage the dorsolateral prefrontal cortex; nonetheless, decisions are ultimately

influenced by emotional reactions in the insula and striatum (Yoon et al., 2006; Plassmann et al., 2008). Retailers that use these ideas in sensory marketing (such ambient smells and tactile product experiences) say that sales of the items they showcase go up by 18–40% (Jiménez-Marín et al., 2019). Price perception, a crucial element in alternative evaluation, has been demonstrated by EEG to be processed emotionally rather than logically, with "charm prices" (e.g., \$9.99) yielding 24% higher sales than rounded prices because to their subliminal allure (Peng et al., 2023).

The choice to buy is the end result of these brain processes. Integrative EEG and GSR investigations have shown an 83% accuracy rate in predicting sales likelihood based on a distinct neural signature (enhanced beta-gamma wave coupling in the left prefrontal cortex) (Zito et al., 2021). When this signature is absent, merchants might use real-time Brainmetric monitoring at the point of sale to discover that immediate interventions enhance conversions by 12-18% (Kiran & Prabhakar, 2021). The post-purchase evaluation of a customer, which is important for lifetime value and repeat business, is greatly impacted by Consumer Brain Science principles. As pointed out by Yoon et al. (2014) when customers relate a good experience to the purchase of an item or service, they are more likely to make a repeat purchase. Additionally, following up with personalized messages that match customers' neural response profiles was found to increase recurrent purchases by 27-22%, compared to generic follow ups (Nilashi, & Yadegaridehkordi, 2020).

Moderating Factors in the Consumer Brain Science-Sales Relationship

While the use of Consumer Brain Science strategies provides much potential in sales, several practical and theoretical factors must be considered to ensure their effectiveness. The following moderating factors are essential. Individual variations in Brain cognitive processing considerably influence reactions to Consumer Brain Science stimuli. fMRI research has delineated three distinct consumer brain phenotypes: "rational" (predominant System 2 activation), "emotional" (predominant System 1 activation) and "balanced" (integrated Systems 1 and 2 activation), each exhibiting unique responses to marketing stimuli (García et al., 2024). Targeted Consumer Brain Science techniques derived from these traits have realised sales conversion rates that are 22-38% superior to those of undifferentiated approaches (Bhardwaj et al., 2024).

Cultural Brain-science research uncovers significant cross-cultural differences in reactions to Consumer Brain Science stimuli. For example, collectivist societies, such as Nigeria, have a 23% greater activation of the nucleus accumbens in response to group endorsement cues compared to individualist cultures, resulting in varying sales benefits for social proof marketing strategies (Siraj et al., 2024). Colour symbolism also differs Brain-logically between cultures, with colour schemes that fit in with a culture boosting the likelihood of making a purchase by 17–29% (Panwar et al., 2024). Moreover, product category substantially influences the efficacy of Consumer Brain Science. When people buy things that they care about a lot, such vehicles or gadgets, they use System 2 processes more. Rational appeals work 28% better than emotional ones (Anderson et al., 2023). On the other hand, System 1 is in charge of low-involvement purchases, such snacks and personal care goods. Sensory Consumer Brain Science methods can boost sales by 35–42% (Jiménez-Marín et al., 2019). Integrated Consumer Brain Science methods work best for hybrid items that need both emotional and intellectual evaluation, such financial

services. When both systems are used well, conversion rates go up by 31% (Dwivedi & Sharma, 2024).

The digital vs physical setting also affects how well Consumer Brain Science works to boost sales. EEG research indicates that internet buying generates 18% less emotional engagement compared to in-store experiences, necessitating revised Consumer Brain Science strategies (Jothimani et al., 2023). Nonetheless, AI-driven personalisation utilising neural response patterns might bridge this gap, since well-tailored digital experiences can attain sales conversion rates akin to those of physical stores (Harris & Armstrong, 2019).

Ethical Considerations and Consumer Resistance

As Consumer Brain Science techniques become more advanced and widely used, people are becoming increasingly worried about how they may change how people act, which could have big effects on long-term sales relationships and brand trust. These issues are particularly pertinent in light of studies indicating that 68% of customers feel uneasy about the use of their Brain-logical data for marketing reasons (Singh, 2020). Brain-science study uncovers an ethical conundrum in the efficacy of Consumer Brain Science. Subliminal priming tactics, such as a quick flash of a smiling face, can boost short-term sales by 12–15%. However, they also stimulate the anterior cingulate cortex, which is linked to cognitive conflict and suspicion (Morin, 2011). Longitudinal research indicates that firms utilising these procedures encounter 23% greater customer attrition rates over three years in contrast to those applying transparent Consumer Brain Science strategies (Nilashi, & Yadegaridehkordi, 2020).

Increasingly, consumers are aware of and resistant to Consumer Brain Science techniques. fMRI studies suggest that when people find out about Consumer Brain Science efforts, their medial prefrontal cortex (which is linked to scepticism) becomes more active. This makes the method 37–42% less successful (Alsharif et al., 2023). This "reactance effect" indicates that the most effective sales methods harmonise advanced Consumer Brain Science techniques with ethical clarity. Different countries have different rules for Consumer Brain Science, which makes it hard for worldwide businesses to follow them. The European Union's General Data Protection Regulation (GDPR) calls neural data "special category data," which means it cannot be used in marketing too much (Singh, 2020). Comparative sales assessments indicate that Consumer Brain Science-driven campaigns in GDPR-regulated areas see conversion rates that are 18-25% lower than those in less-regulated markets, underscoring the commercial implications of ethical limits (Kiran & Prabhakar, 2021). In poor nations such as Nigeria, a lack of data makes this evaluation somewhat difficult; nonetheless, awareness is increasing.

Conclusion and Implications

The results of this study indicate that Brain-marketing significantly impacts consumer decision-making, especially with the assessment of alternatives and the purchasing choice. The results corroborate the Dual-Process Theory by illustrating that Brain-marketing strategies predominantly engage intuitive and emotional cognitive processes (System 1), frequently circumventing logical, conscious thinking (System 2). This clearly shows that sensory sensations, emotional triggers and subconscious clues have a big impact on what consumers like and make it easier for them to make decisions. The study also supports the premise that Brain-marketing

techniques may gently influence what people buy, which makes marketing methods more effective at increasing sales and getting people more involved with the brand.

These discoveries have both practical and theoretical ramifications. Understanding how Brain-marketing affects how people make decisions may help organisations create more focused and successful marketing tactics that improve brand positioning, get more customers involved and boost sales conversion rates. Marketers may use sensory branding, emotional storytelling and priming to make ads and product experiences that are more interesting. Policymakers must also contemplate the ethical ramifications of Brain-marketing, guaranteeing that rules safeguard customers from deceptive strategies that exploit subconscious susceptibilities. Theoretically, the study integrates marketing, psychology and Brain-science, providing evidence that enhances the use of Dual-Process Theory in consumer research. It also sets the stage for future research to investigate more aspects of Brain-marketing.

Limitations and Suggestions for Future Research

One weakness of the study is its dependence on secondary sources and theoretical frameworks without empirical confirmation via primary data collecting. The study does a good job of combining theories of consumer decision-making with Consumer Brain Science concepts, however it doesn't have any Brain-imaging investigations or empirical consumer tests, so it can't relate to real customer behaviour. Experimental approaches utilising tools like functional magnetic resonance imaging (fMRI), electroencephalography (EEG), or eye-tracking should be incorporated into future research in order to provide empirical evidence for theoretical claims and to shed light on the psychological and Brain-logical processes that influence consumer decision-making.

Yet another drawback is that the research only covers Consumer Brain Science in broad strokes, not individual strategies or sectors. Emotional branding, sensory marketing and priming are all tools in Consumer Brain Science's toolbox, but the study treats them all as one concept. Because of the breadth of this claim, it is difficult to determine which specific Consumer Brain Science strategies are most effective in influencing purchasing decisions. For more actionable insights for businesses, future research should focus on the results of certain Consumer Brain Science tactics within specific industries, including e-commerce, luxury goods, or FMCG.

The research also has the flaw of presuming that Consumer Brain Science has the same effect on all consumers regardless of their thinking style, cultural background, or moral compass. Various demographic factors, including age, personality type and cultural background, can significantly impact how people respond to Consumer Brain Science stimuli. When these differences are ignored, the relationship between Consumer Brain Science and consumer decision-making becomes less complex. Therefore, to ensure that marketing approaches are ethically built and appropriately targeted towards diverse client segments, future research should examine how demographic and psychological inequalities impact the effectiveness of Consumer Brain Science methods.

Last but not least, the research ignores the long-term effects of Consumer Brain Science on consumer behaviour and loyalty to the brand in favour of focussing on the immediate results of decisions. While studies have shown that Consumer Brain Science can influence immediate purchases, they have not examined whether or whether these effects are long-lasting or drive

repeat purchases. In order to help businesses better understand how to use Consumer Brain Science strategies to keep customers engaged and loyal, future research should use longitudinal approaches to gauge whether consumer preferences impacted by Consumer Brain Science remain stable, change, or even decline.

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