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A Qualitative Model of Customer Purchase Decision-Making Based on Neuromarketing (FMCG Industry)

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Abstract

The purpose of this study was to develop a qualitative model explaining how neuromarketing influences customer purchase decision-making in the context of FMCG industry. This research employed a qualitative phenomenological design with an interpretive approach. Data were collected through in-depth semi-structured interviews with 13 experts in psychology, neuroscience, and marketing, selected via purposive snowball sampling from a pool of approximately 50 specialists located in District 6 of Tehran. Interviews were recorded, transcribed, and verified by participants. Data analysis followed grounded theory principles and the coding framework of King and Horrocks (2010), moving from descriptive coding to interpretive coding and thematic integration. Credibility and trustworthiness were ensured through prolonged engagement, triangulation, peer debriefing, and member checking, applying the four criteria of Guba and Lincoln—credibility, transferability, dependability, and confirmability. The analysis yielded 146 initial codes that were categorized into contextual, causal, strategic, and intervening conditions, with outcomes integrated under a central category of neuromarketing. Contextual conditions emphasized content structuring and emotional engagement, while causal conditions highlighted the role of sensory stimuli such as packaging, color, and music. Strategies included storytelling, multisensory experiences, and visual displays, whereas intervening conditions revealed cultural differences, conflicting information, and brand switching behaviors as mediators of consumer response. Outcomes indicated increased purchase intention, brand trust, emotional stimulation, and consumer satisfaction. Collectively, the findings illustrate how subconscious cognitive and emotional mechanisms shape purchasing behavior in supermarket settings. Neuromarketing provides a powerful framework for understanding and influencing consumer behavior by integrating sensory, emotional, and cognitive dimensions into marketing strategies. This study highlights the importance of tailoring neuromarketing interventions to cultural and contextual factors while emphasizing trust and ethical responsibility in fostering sustainable consumer–brand relationships.

Keywords: Neuromarketing; Consumer decision-making; FMCG industry; Sensory marketing; Qualitative research; Grounded theory

1. Introduction

The rapid evolution of consumer markets has brought increasing attention to the psychological and neurological mechanisms underlying purchasing behavior. Traditional marketing approaches, once heavily dependent on self-report surveys and observational studies, are now being complemented and, in many cases, replaced by neuromarketing techniques. Neuromarketing, broadly defined as the application of neuroscience tools and theories to marketing research, seeks to uncover the unconscious and non-verbal drivers of consumer decision-making, providing companies with deeper insights into how

customers engage with products, brands, and advertising stimuli (Iloka & Onyeke, 2020). This perspective is particularly relevant in FMCG industry, where decisions are often made rapidly, influenced by sensory stimuli, packaging, and emotional triggers rather than extended deliberation (Beyari et al., 2024).

Neuromarketing research has expanded considerably in recent years, with studies utilizing brain imaging, eye-tracking, electroencephalography (EEG), galvanic skin response (GSR), and facial expression analysis to measure consumers' affective and cognitive responses (Alsharif et al., 2021b). These technologies aim to capture real-time reactions beyond the limits of conscious self-report, thus addressing gaps in traditional marketing studies (Rawnaque et al., 2020). While the field remains debated—particularly regarding ethical implications and the interpretation of neural data (Brenninkmeijer et al., 2019)—its application in marketing research has demonstrated significant value in explaining consumer behavior at a level of detail not accessible through conventional methods (Bojić et al., 2021).

A critical foundation for neuromarketing lies in the neuroscientific understanding of emotion and memory, both of which are vital in influencing purchase behavior. Studies show that consumers' decisions are not solely rational but often guided by emotional triggers and the way information is encoded into memory (Beyari et al., 2024). In supermarket environments, where products compete for attention across short time spans, emotions and memory cues embedded in packaging, branding, or sensory exposure play an essential role. Research exploring EEG-based signals, for example, has illustrated how emotional arousal and cognitive processing interact in predicting consumer preferences (Al-Nafjan, 2022; Khondakar et al., 2024).

The application of EEG in neuromarketing research is particularly prominent because of its high temporal resolution, portability, and relative affordability compared to other neuroimaging tools (Nazari Ghazvini et al., 2023). Advanced analytical methods, such as machine learning, have further enhanced the predictive capabilities of EEG signals, improving accuracy in estimating consumer preferences and reactions (Hakim et al., 2021). For instance, intelligent systems that combine multiple EEG measures with artificial intelligence techniques have demonstrated stronger predictive performance than traditional self-report measures alone (Mashrur et al., 2022). This advancement suggests that neuromarketing can significantly transform how organizations interpret customer intentions and optimize marketing strategies (Ghazvini et al., 2024).

Despite the technological emphasis, neuromarketing extends beyond neuroscience tools into broader frameworks of consumer behavior. Scholars argue that the effectiveness of neuromarketing lies in integrating sensory, cognitive, and emotional pathways into marketing strategies (Amiri et al., 2022). By examining motivational factors that underlie attention, interest, and purchase intention, neuromarketing provides a holistic view of consumer decision-making. This is evident in studies analyzing how multisensory experiences, such as visual stimuli in packaging or auditory cues in advertisements, can create powerful emotional connections between consumers and products (Cuesta et al., 2018).

At the same time, neuromarketing is increasingly viewed as a valuable contributor to sustainable marketing strategies. Recent works emphasize the use of advanced technologies such as artificial intelligence, big data, and cognitive neuroscience as frameworks for building marketing campaigns that are both effective and ethically conscious (Papić et al., 2023; Suomala, 2018). Moreover, gamification techniques have been combined with neuromarketing approaches to enhance user experience, drive engagement, and reinforce positive consumer–brand relationships (Behl et al., 2023). In digital and retail spaces alike, the application of neuromarketing is not limited to boosting sales but also extends to reinforcing brand trust and long-term loyalty (Pramudana et al., 2025).

An important dimension in the field is the debate around ethics and transparency. Some critics have noted that the reliance on unconscious data raises concerns regarding consumer autonomy and manipulation (Brenninkmeijer et al., 2019). Ethical frameworks for neuromarketing argue that while the practice can enrich marketing, it must remain transparent and respect consumer rights (Zarei Pour Nasirabadi et al., 2025). A growing body of literature, particularly in relation to green marketing and ethical consumption, stresses that neuromarketing should not simply be a tool for persuasion but must also foster responsible consumer behavior and align with broader societal values (Zarei Pour Nasirabadi et al., 2025).

Recent studies also highlight sector-specific applications of neuromarketing. In hospitality and retail, for instance, EEG-based research has revealed how subliminal advertising and environmental cues shape hotel selection and product preference

(Hsu & Chen, 2020). In politics, the use of neuromarketing has been linked to voter persuasion and electoral outcomes (Hegazy, 2021). Similarly, in sports, neuromarketing frameworks have been employed to design fan engagement and sponsorship strategies (Mannani et al., 2021). These diverse applications illustrate the versatility of neuromarketing and underscore its potential across industries.

Beyond immediate applications, neuromarketing also plays a critical role in bridging the gap between scientific inquiry and practical marketing. However, scholars have pointed to a persistent gap between scientific rigor and commercial use (Brenninkmeijer et al., 2019). This "translation gap" highlights the importance of designing models that are not only grounded in robust data but also adaptable to practical marketing contexts. In Iran, for example, neuromarketing models have been developed to optimize industries ranging from agriculture to sports, showing how local adaptations of neuromarketing research can generate meaningful insights (Afshar et al., 2022; Mannani et al., 2021).

The role of artificial intelligence and machine learning in neuromarketing cannot be understated. By analyzing vast streams of biometric and neurological data, AI enables marketers to detect patterns that are otherwise invisible to human analysis (Ghazvini et al., 2024). For example, studies have shown how AI can be applied to optimize the use of EEG signals in marketing research, providing more reliable insights into consumer engagement (Khondakar et al., 2024). Similarly, AI-driven models contribute to building adaptive marketing strategies capable of responding in real time to consumer behavior (Parsakia & Jafari, 2023).

From a methodological standpoint, systematic reviews have underlined the growing sophistication of neuromarketing as a discipline. The field has developed from exploratory applications of brain imaging to structured models supported by cross-disciplinary collaborations between neuroscientists, psychologists, marketers, and computer scientists (Singh, 2023). These reviews also highlight that neuromarketing remains in an evolving phase, requiring continued research to clarify its theoretical frameworks, refine its tools, and address ethical challenges (Ismajli et al., 2022).

Another critical issue in neuromarketing is consumer diversity. Emotional and cultural differences strongly shape how consumers interpret marketing stimuli (Yarosh et al., 2021). For instance, studies show that consumers in different cultural contexts may respond differently to emotional appeals, sensory triggers, or cognitive frames. This complexity requires neuromarketing models to be adaptable and sensitive to cultural and demographic variables (Danylyuk, 2022). Without such sensitivity, neuromarketing strategies risk being ineffective or even counterproductive.

The future of neuromarketing lies in its ability to integrate neuroscience tools, behavioral psychology, data analytics, and cultural insight into a unified framework. Scholars agree that neuromarketing's unique contribution to marketing science is its capacity to link unconscious processes with observable behavior, thus bridging the gap between "what consumers say" and "what consumers actually do" (Alsharif et al., 2023). Importantly, neuromarketing does not replace traditional marketing but enriches it by adding new layers of evidence and interpretation (Alsharif et al., 2021b).

In sum, the literature highlights neuromarketing as an emerging, multidisciplinary field that provides valuable tools for understanding and influencing consumer behavior. Its applications span industries, from fast-moving consumer goods to services, politics, and sports, and its methodological scope continues to expand with advances in neuroscience and AI. However, it also raises critical challenges regarding ethics, cultural differences, and the gap between research and practice. Addressing these challenges requires building comprehensive, context-specific models that integrate scientific rigor with practical applicability. Against this background, the present study aims to develop a qualitative model of customer purchase decision-making for FMCG industry based on neuromarketing, integrating expert perspectives from psychology, neuroscience, and marketing.

2. Methods and Materials

This research was conducted using a qualitative methodology with a holistic and interpretive approach, aiming to explore the lived experiences and expert insights within a natural context. Qualitative research is especially suited for investigating human values, beliefs, emotions, perceptions, and behavioral foundations, requiring the researcher to set aside personal biases and attempt to see the world through the perspectives of participants. The study adopted a phenomenological design, which

emphasizes uncovering the meanings that individuals ascribe to their experiences rather than relying on statistical or quantitative tools. The participants were selected through purposive sampling, specifically employing a snowball strategy to ensure access to information-rich cases until theoretical saturation was reached. The interviews were conducted with a total of 13 experts divided into three categories: psychologists specializing in consumer and customer behavior, neuroscientists focusing on cognitive neuroscience in relation to social mechanisms of marketing and decision-making physiology, and marketing specialists with expertise in customer decision-making processes. The participants were drawn from a pool of approximately 50 experts located in District 6 of Tehran, an area known for the presence of prominent scholars in cognitive neuroscience and marketing research with emphasis on neuromarketing and consumer behavior studies.

Data collection was primarily carried out through in-depth semi-structured interviews, guided by a protocol designed to capture detailed perspectives on the role of neuromarketing in shaping customer purchase decisions for FMCG industry. The interview guide contained open-ended questions that allowed participants to reflect freely and elaborate on their experiences, while also ensuring consistency across interviews. To ensure trustworthiness, all interviews were conducted face-to-face in settings convenient for the participants, and with their consent, conversations were audio recorded in addition to field notes taken by the researcher and a collaborating interviewer. Transcriptions were prepared from the recordings and shared with participants for verification, thereby enhancing confirmability. Demographic information such as gender, academic background, professional expertise, and years of experience was also collected to provide contextual detail and to support transferability of findings. Consistent with qualitative research standards, the validity of the data was ensured by applying the four criteria established by Guba and Lincoln (2000): credibility, transferability, dependability, and confirmability. Prolonged engagement, triangulation, peer debriefing, and respondent validation were employed to enhance credibility, while detailed descriptions of participants' characteristics supported transferability. Dependability was addressed through consistent procedures in data collection and confirmability was strengthened by maintaining an audit trail documenting the entire research process.

The interviews were analyzed using a grounded theory approach, relying on inductive reasoning to derive conceptual categories and theoretical insights directly from the data. This analytic process was conducted systematically in three stages following the model of King and Horrocks (2010). The first stage, descriptive coding, involved repeated readings of the transcripts to identify initial ideas, key phrases, and recurring patterns within the data. This stage provided the foundation for subsequent interpretive coding. In the second stage, interpretive coding was performed by developing preliminary codes that represented the meaning of textual segments such as sentences, phrases, and words, while ensuring that each code was precisely defined and focused on the phenomenon under investigation. The third stage involved integration, where the different codes were grouped into broader themes and subthemes, which were then organized into core categories that reflected the central dimensions of customer purchase decision-making under neuromarketing influence. During this stage, cross-case comparisons were made to ensure coherence and to highlight both converging and diverging views among participants. Throughout the process, analytic memos were kept to capture the researcher's reflections and to ensure rigor in interpretation. The hierarchical coding process ultimately led to the identification of central themes that informed the development of a qualitative model of customer purchase decision-making. This process emphasized both within-case and across-case analysis, ensuring that the model captured the complexity and depth of participants' insights.

3. Findings and Results

The analysis of interviews led to the extraction of a rich set of initial codes that reflect the diverse perspectives of experts in psychology, neuroscience, and marketing on the mechanisms of customer purchase decision-making influenced by neuromarketing. Through a systematic coding process, the researcher identified 146 primary codes across the 13 interviews, each representing specific concepts, behavioral cues, or decision-making mechanisms articulated by participants. These codes highlight both convergent and divergent understandings of how neurological and psychological factors affect consumer choices in the FMCG industry sector.

Table 1. Frequency and percentage of extracted codes across interviewees

Interviewee	Number of Codes	Percentage of Codes
1	10	6.85

2	13	8.90
3	11	7.53
4	15	10.27
5	11	7.53
6	12	8.22
7	14	9.59
8	12	8.22
9	9	6.16
10	12	8.22
11	11	7.53
12	8	5.48
13	8	5.48
Total	146	100

As shown in the table, the number of extracted codes varies among interviewees. The highest number of codes emerged from interviewee 4, who provided 15 codes, accounting for 10.27% of the total, followed by interviewee 7 with 14 codes (9.59%). In contrast, the lowest number of codes was recorded from interviewees 12 and 13, each contributing 8 codes (5.48%). This distribution suggests a heterogeneous but complementary contribution of insights across the sample, underscoring the diversity of expertise and experiential depth among participants.

The grounded theory analysis began by categorizing these initial codes into broader conceptual clusters to identify patterns and shared meanings. Through descriptive and interpretive coding, the researcher moved from raw textual data toward more abstracted themes. The codes were then progressively refined and grouped into higher-order categories and subthemes. This inductive process eventually enabled the construction of central themes that provide a foundation for theorizing about the qualitative model of customer purchase decision-making based on neuromarketing.

Table 2. Coding process of contextual conditions in the customer purchase decision-making model based on neuromarketing

Open Code	Axial Code	Selective Code
Strong summary	Ending content	Beginning and ending of content
Use of attractive titles	Beginning content	
Problem identification		
Introduction of solution		
Creating a sense of belonging	Use of social emotions	Emotion and excitement
Attention to social issues		
Storytelling	Emotional connection	
Personalizing experience		

The analysis of contextual conditions revealed that experts emphasized both structural and emotional dimensions in the design of marketing messages. Codes such as strong summaries, attractive titles, and problem-solution framing highlight the importance of content flow, while storytelling, social emotions, and personalization emphasize the affective layer that strengthens consumer attachment. Together, these findings illustrate that neuromarketing interventions are most effective when contextual conditions integrate both rational structuring and emotional resonance.

Table 3. Coding process of causal conditions in the customer purchase decision-making model based on neuromarketing

Open Code	Axial Code	Selective Code
Product information on packaging	Packaging	Visual product stimuli
Types of packaging		
Transparent packaging		
Creative and aesthetic packaging design		
Clear and recognizable logo		
Brand story on packaging		
Packaging geometry		
Use of multiple senses	Sensory experiences	
Use of music		
3D images	Images and colors	
Vivid colors		

Complementary colors		
Color palettes		
Use of real and high-quality images	Visual techniques	
Use of colors		
White space utilization		
Dynamic images		
Three-dimensional visuals		
Arrangement		
Simple geometric shapes		
Simple and user-friendly design		

The causal conditions illustrate the primacy of sensory triggers in shaping consumer decisions. Packaging was a dominant theme, with codes pointing to design creativity, logo clarity, and storytelling integration. Sensory elements such as music, color contrasts, and 3D imagery further reinforce product salience. These findings confirm that neuromarketing leverages sensory-rich cues to activate consumer attention and drive purchasing tendencies at the initial stages of decision-making.

Table 4. Coding process of strategies in the customer purchase decision-making model based on neuromarketing

Open Code	Axial Code	Selective Code
Use of multiple senses	Sensory experience	Tangibility
Real customer experiences	Storytelling	
Product story narration		
High-quality images	Visual display	
Attractive videos		

The strategies identified through interviews underscore the importance of engaging the consumer through tangible, sensory, and narrative techniques. Experts noted that storytelling, whether through real customer experiences or product narratives, enhances relatability, while high-quality visuals and videos strengthen brand communication. These strategies collectively ensure that neuromarketing not only stimulates attention but also embeds products more deeply in consumers' emotional and cognitive frameworks.

Table 5. Coding process of intervening conditions in the customer purchase decision-making model based on neuromarketing

Open Code	Axial Code	Selective Code
Conflicts in product information	Visual conflicts	Conflict acceptance
Conflicting advertisements		
Color conflicts		
Conflict between belief and new info	Cognitive conflicts	
Contradiction with personal beliefs		
Personality models	Customer personality differences	
Cultural and religious values	Cultural differences	
Ignoring seller's statements	Customer disregard for seller behavior	Customer self-centeredness
Influence of others' opinions		
Disregard for advertisements	Behavioral change	
Previous purchase experience		
Change in consumer behavior		
Influence from competitor brands	Lack of brand loyalty	
Brand switching		
Demand for better services		

The intervening conditions revealed various obstacles and moderators that influence how neuromarketing strategies translate into purchase decisions. Conflicts—both visual and cognitive—alongside differences in personality and culture emerged as significant. Furthermore, issues such as lack of brand loyalty, brand switching, and reliance on peer influence highlight how external and internal contradictions may weaken or redirect the intended impact of neuromarketing cues.

Table 6. Coding process of outcomes in the customer purchase decision-making model based on neuromarketing

Open Code	Axial Code	Selective Code
Customer support and service	Improved shopping experience	Intention to purchase

Optimized user experience design	
Transparency and honesty	Building trust and credibility
Trust in brand	
Feeling satisfied	Emotional stimulation
Feeling happy	
Identifying customer emotions	Emotion and reaction analysis

The outcomes highlighted in this stage confirm that neuromarketing can significantly enhance consumer experience and foster stronger brand-consumer relationships. Improvements in user experience, transparent communication, and effective customer service were associated with increased trust and purchase intention. Moreover, emotional stimulation, particularly in terms of satisfaction and happiness, suggests that neuromarketing outcomes are not only cognitive but also deeply affective.

Table 7. Coding process of the central category in the customer purchase decision-making model based on neuromarketing

Open Code	Axial Code	Selective Code
Examining the use of emotions and consumer choices	Customer emotions and experiences	Neuromarketing
Exploring the impact of the five senses on consumer behavior		
Recognizing consumer emotions and experiences		
Identifying and deeply understanding consumer needs and wants		
Connecting with audience emotions	Use of brain processes and actions	
Analysis of neurological and biometric data		
Study of neurological and emotional reactions		

The central category integrates the diverse conditions, strategies, and outcomes into a unifying theme. At its core, the model emphasizes neuromarketing as a framework that directly links consumer emotions, sensory processing, and neurological mechanisms to decision-making behaviors. This holistic view confirms that neuromarketing is not limited to surface-level techniques but encompasses a deep engagement with consumers' cognitive and affective systems, thereby providing a robust foundation for modeling purchase decisions in supermarket contexts.

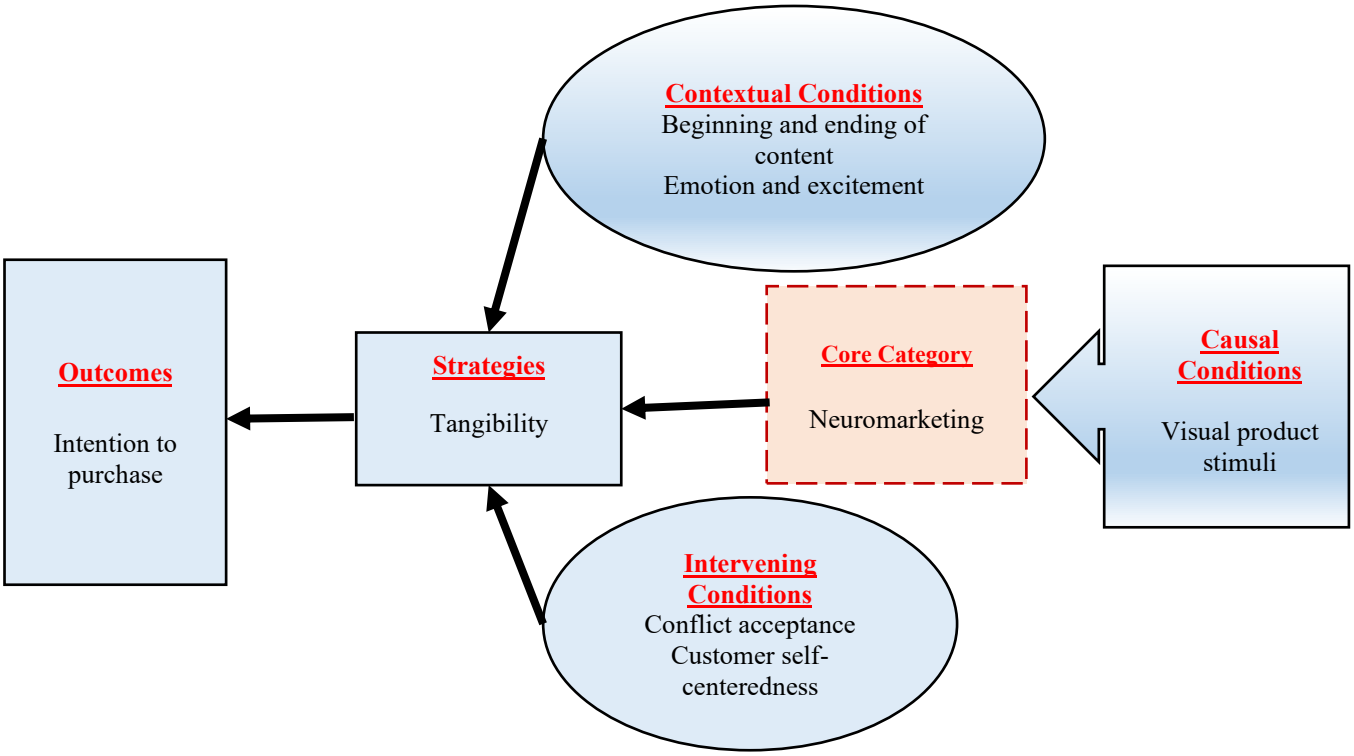

Figure 1. Final Paradigm Model of the Study

4. Discussion and Conclusion

The findings of this study provide a comprehensive perspective on how neuromarketing principles influence customer purchase decision-making in the context of FMCG industry. Through qualitative analysis, several key dimensions emerged, including contextual, causal, intervening, and strategic conditions, all converging in a central model defined by neuromarketing. These findings highlight the importance of emotions, sensory stimuli, and cognitive triggers in shaping purchase behavior, confirming that decision-making in supermarket environments is far from purely rational. Rather, it is shaped by subconscious factors that neuromarketing tools are uniquely equipped to uncover.

The emergence of contextual conditions, such as the use of attractive titles, problem–solution structures, and storytelling, illustrates how marketing communication must provide both structural clarity and emotional depth. This is aligned with previous findings that underscore the role of narratives and emotional content in strengthening consumer engagement (Beyari et al., 2024). Neuromarketing studies repeatedly confirm that consumers are more likely to respond positively when marketing stimuli generate emotional arousal and memory encoding (Alsharif et al., 2021a). Emotional attachment, whether through personalization, storytelling, or social cues, becomes the basis for building long-term consumer trust and loyalty (Amiri et al., 2022).

The causal conditions identified in this study further underscore the central role of sensory experiences in consumer decision-making. Packaging, for instance, emerged as a critical determinant, with codes reflecting creativity, clarity, and storytelling elements embedded into the product's physical appearance. Previous research has similarly shown that packaging design has a profound impact on consumer choice, as demonstrated through eye-tracking and GSR studies that highlight how colors, logos, and textures capture immediate attention (Cuesta et al., 2018). In addition, research using EEG and biometric measures has demonstrated that sensory cues such as color and sound elicit neural responses strongly predictive of consumer preference (Al-Nafjan, 2022; Khondakar et al., 2024). These findings reinforce the idea that neuromarketing provides an evidence-based explanation for the influence of packaging and sensory stimulation.

The strategies identified through this study—particularly storytelling, sensory experiences, and visual displays—mirror trends observed in the literature on consumer engagement. For example, gamification combined with neuromarketing has been found to enhance user experience and brand interaction by making purchasing experiences more immersive (Behl et al., 2023). Similarly, research on consumer emotions during online purchases has shown that storytelling and visual cues can strengthen feelings of trust and satisfaction (Yarosh et al., 2021). Such strategies highlight how marketers can transform superficial brand interactions into memorable experiences through narrative depth and sensory immersion.

The intervening conditions revealed challenges that marketers face in deploying neuromarketing techniques effectively. Conflicting product information, contradictory advertisements, and cultural or personal belief systems can significantly mediate consumer responses. These findings are supported by prior work emphasizing the role of culture and individual personality differences in shaping consumer interpretations of marketing messages (Danylyuk, 2022). Without considering these moderating factors, neuromarketing campaigns risk being ineffective or even producing negative reactions. For example, brand-switching behaviors, lack of loyalty, and reliance on social influence may override sensory triggers if the broader cultural or social context is ignored (Ismajli et al., 2022).

The outcomes of this model further demonstrate the capacity of neuromarketing to foster trust, credibility, and purchase intention. This aligns with evidence showing that neuromarketing tools can be used to design user experiences that improve transparency and strengthen consumer trust (Beyari et al., 2024). Furthermore, research has shown that emotional stimulation—particularly happiness and satisfaction—drives positive brand evaluation and loyalty (Alsharif et al., 2023). In practical terms, this means that neuromarketing's ultimate contribution is not simply to increase sales but to create sustainable consumer–brand relationships based on positive emotional experiences.

The integration of these findings within the central category of neuromarketing underscores the multidisciplinary nature of the field. The results confirm that consumer behavior cannot be fully understood without examining the interplay of neurological responses, psychological triggers, and cultural contexts. Studies that combine EEG, eye-tracking, and machine learning have shown how integrated approaches provide more robust and predictive insights than isolated methods (Hakim et

al., 2021; Mashrur et al., 2022). In addition, AI-driven approaches to analyzing EEG data are expanding the boundaries of neuromarketing by enabling real-time, adaptive marketing strategies (Ghazvini et al., 2024; Parsakia & Jafari, 2023). These developments confirm that neuromarketing is an evolving discipline that continues to expand its scientific and practical contributions.

From a broader theoretical perspective, these findings contribute to ongoing debates in the literature about the gap between neuromarketing science and its practical application. While neuromarketing has been criticized for being overly commercialized or insufficiently transparent (Brenninkmeijer et al., 2019), this study demonstrates that when grounded in rigorous qualitative analysis, neuromarketing provides a valuable framework for understanding purchase decision-making. Moreover, by applying neuromarketing to FMCG industry, this study highlights the importance of context-specific models. This aligns with research emphasizing the need for local adaptation, such as studies in Iran's mushroom industry or sports sectors, where neuromarketing frameworks were tailored to cultural and industrial settings (Afshar et al., 2022; Mannani et al., 2021).

The results also align with the growing body of work exploring the intersection of neuromarketing and sustainability. Scholars have argued that neuromarketing tools can help design campaigns that not only capture attention but also promote ethical consumer behavior and sustainable practices (Zarei Pour Nasirabadi et al., 2025). In supermarket contexts, this could mean using sensory triggers to encourage healthier or more environmentally responsible purchasing. Such applications highlight neuromarketing's potential beyond immediate profit generation, contributing to long-term consumer well-being and social responsibility.

Another important contribution of this study lies in illustrating how emotions and memory form the core of consumer behavior. This is consistent with previous studies showing that marketing stimuli engaging emotional and memory-related brain regions are more effective in driving consumer choices (Alsharif et al., 2021b; Beyari et al., 2024). Similarly, political and digital marketing studies highlight the same mechanisms, where emotional cues in campaigns have been decisive in shaping behavior (Hegazy, 2021; Pramudana et al., 2025). The universality of emotion and memory across contexts highlights their central role in neuromarketing theory and practice.

The application of advanced technologies in neuromarketing also resonates with this study's findings. Techniques such as EEG, biometric sensors, and eye-tracking are increasingly integrated with artificial intelligence to detect patterns in consumer behavior (Ghazvini et al., 2024; Khondakar et al., 2024). This convergence of neuroscience and AI provides opportunities to design marketing strategies that are both predictive and adaptive. Scholars have emphasized that future developments in neuromarketing will depend on the ability to harness such technologies while ensuring ethical transparency (Papić et al., 2023; Singh, 2023).

Finally, the findings of this study illustrate that neuromarketing, when applied carefully, enhances the customer experience in a holistic manner. Beyond influencing purchase decisions, neuromarketing strategies improve satisfaction, foster trust, and establish long-term brand relationships. These findings reinforce the notion that neuromarketing is not merely a set of tools but a broader paradigm that integrates neuroscience, psychology, and marketing into a unified framework (Alsharif et al., 2023).

Despite its contributions, this study is not without limitations. First, the qualitative design, while allowing for rich and in-depth insights, restricts the generalizability of findings across larger populations. The reliance on interviews with a relatively small number of experts means that the perspectives captured may not represent the full diversity of views in psychology, neuroscience, and marketing. Second, although efforts were made to ensure credibility, dependability, and confirmability, the interpretive nature of qualitative coding introduces potential bias in data interpretation. Finally, the study was geographically confined to experts in Tehran, limiting cross-cultural applicability and making it difficult to assess whether the findings hold in different consumer markets or cultural contexts.

Future research could build on these findings by employing mixed-method designs that integrate qualitative insights with quantitative validation. For instance, experimental neuromarketing studies using EEG, fMRI, or eye-tracking could be used to test the robustness of the themes identified here. Comparative studies across cultures and consumer segments would also enhance understanding of how contextual and cultural factors shape neuromarketing effectiveness. Additionally, future

research could explore the ethical dimensions of neuromarketing more deeply, examining how transparency, privacy, and consumer rights can be safeguarded while still benefiting from the insights provided by neuroscientific tools.

For practitioners, the findings of this study suggest that successful neuromarketing strategies in supermarket contexts must integrate emotional and sensory triggers with credibility and trust-building mechanisms. Marketers should design packaging and advertising that not only captures attention but also resonates emotionally and culturally with consumers. Emphasizing transparency and ethical responsibility will be critical in building long-term consumer trust. Moreover, practitioners should adopt adaptive strategies, leveraging artificial intelligence and real-time consumer data to personalize experiences while maintaining respect for consumer autonomy.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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