

**NEUROMARKETING AND CONSUMER BEHAVIOUR IN HEALTH CARE  
PROVIDING ORGANISATIONS IN BENIN CITY**

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BENIN CITY**

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**A PROJECT WORK PRESENTED IN PARTIAL FULFILMENT OF THE  
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DEGREE IN MARKETING, FACULTY OF MANAGEMENT SCIENCES,  
UNIVERSITY OF BENIN, BENIN CITY**

**NOVEMBER 2025**

## **DECLARATION**

I hereby declare that this research project titled “Neuromarketing and Consumer Behaviour in Health Care Providing Organisations in Benin City” is my original work carried out in the Department of Marketing, Faculty of Management Sciences, University of Benin, Benin City, under the supervision of Dr. Samuel J. Osifo.

This work has not been submitted in part or full for the award of any degree or certificate in any other institution. All sources of information used have been duly acknowledged.

I take full responsibility for any error or omission that may be found in this research work.

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**Favour FRANCIS**

## **CERTIFICATION**

This is to certify that this research project titled “Neuromarketing and Consumer Behaviour in Health Care Providing Organisations in Benin City” was carried out by Francis Favour (Matric No: MGS2207416) of the Department of Marketing, Faculty of Management Sciences, University of Benin, Benin City, Nigeria, under my supervision.

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**Date**

## **DEDICATION**

This project work is dedicated to the Almighty God, whose guidance and blessings illuminated my path even in the darkest moments.

To my beloved parents, Mr. and Mrs. Francis, your unwavering love, prayers, and support have been the pillar of my strength throughout this journey.

With heartfelt gratitude, I dedicate this work as a testament to the power of faith, family, and perseverance.

## **ACKNOWLEDGEMENTS**

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My heartfelt thanks also go Mr. YoungSam, to all my siblings- Samuel, Jonah, Issac, Jacob, Felicity and Victorious and my friends- Ade, David, Lorah, who supported me in diverse ways. Your love, encouragement, and prayers kept me going.

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## TABLE OF CONTENTS

<b>COVER PAGE</b> .....	<b>Error! Bookmark not defined.</b>
<b>DECLARATION</b> .....	iii
<b>CERTIFICATION</b> .....	iv
<b>DEDICATION</b> .....	v
<b>ACKNOWLEDGEMENTS</b> .....	vi
<b>ABSTRACT</b> .....	x
<b>CHAPTER ONE</b> .....	1
<b>INTRODUCTION</b> .....	1
1.1 Background to the Study .....	1
1.2 Statement of the Problem .....	2
1.3 Research Questions .....	4
1.4 Research Objectives .....	4
1.5 Research Hypotheses .....	5
1.6 Significance of the Study .....	5
1.7 Scope and Delimitation of the Study .....	6
1.8 Definition of Terms .....	7
<b>CHAPTER TWO LITERATURE REVIEW</b> .....	8
2.1 Introduction .....	8
2.2 Conceptual Review .....	8
2.2.1 Consumer Behaviour in Healthcare Organisations .....	8
2.2.2 Neuromarketing .....	10
2.3.1 Emotional Branding .....	12
2.2.3 Sensory Marketing .....	14
2.2.4 Attention Capturing Techniques .....	15
2.2.5 Memory Recall Stimulation .....	17
2.3 Theoretical Review .....	21
2.3.1 Elaboration Likelihood Model (ELM) .....	21
2.3.2 Dual Process Theory .....	23
2.3.3. Emotional Contagion Theory .....	25
2.3.4 Cognitive Load Theory (CLT) .....	27
2.4 Theoretical Framework .....	29
2.4.1 Elaboration Likelihood Model (ELM) .....	29
2.4.2 Dual Process Theory .....	30

2.4.3 Emotional Contagion Theory .....	30
2.4.4 Cognitive Load Theory (CLT) .....	31
2.5 Empirical Review .....	32
2.5.1 Emotional Branding and Patient Engagement .....	32
2.5.2 Sensory Marketing and Patient Comfort .....	33
2.5.3 Attention-Capturing Techniques and Patient Awareness .....	34
2.5.3 Memory Recall Stimulation and Health Information Retention .....	35
2.5.5 Summary of Empirical Findings .....	36
<b>CHAPTER THREE .....</b>	<b>37</b>
<b>METHODOLOGY .....</b>	<b>37</b>
3.0 Introduction .....	37
3.1 Research Design .....	37
3.2 Population of the Study .....	38
3.3 Sample Size and Sampling Technique .....	38
3.4 Sources of Data .....	38
3.5 Research Instrument .....	38
3.6 Validity of Research Instrument .....	39
3.7 Reliability of Research Instrument (Pilot Testing Result) .....	39
3.8 Method of Data Collection .....	40
3.9 Model Specification .....	41
3.10 Method of Data Analysis .....	41
<b>CHAPTER FOUR .....</b>	<b>42</b>
<b>DATA PRESENTATION, ANALYSIS, AND INTERPRETATION .....</b>	<b>42</b>
4.1 Introduction .....	42
4.2 Data Presentation .....	43
4.2.1 Demographic Characteristics of Respondents .....	43
4.3 Analysis of Research Questions .....	45
4.3.1 Research Question One: .....	45
4.3.2 Research Question Two: .....	47
4.3.3 Research Question Three: .....	48
4.3.4 Research Question Four: .....	49
4.4 Test of Hypotheses .....	51
4.5 Discussion of Findings .....	53

<b>CHAPTER FIVE</b> .....	54
<b>SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS</b> .....	54
5.0 Summary of Findings .....	54
5.1 Conclusion .....	55
5.2 Recommendations .....	56
5.3 Proposal for Further Studies .....	57
<b>REFERENCES</b> .....	57
<b>APPENDICES</b> .....	68

## ABSTRACT

*This study examined the influence of neuromarketing strategies on consumer behaviour in healthcare providing organisations in Benin City, Edo State, Nigeria. Specifically, it investigated the roles of emotional branding, sensory marketing, attention capturing, and memory recall stimulation in shaping patient perceptions, loyalty, and engagement. The study adopted a descriptive survey research design, with data collected from 100 respondents comprising healthcare consumers and staff from both public and private healthcare facilities. A structured questionnaire was used as the primary instrument, and responses were analysed using descriptive statistics (frequencies, percentages, mean, standard deviation) and multiple regression analysis to test the research hypotheses.*

*The findings revealed that emotional branding, sensory marketing, and memory recall stimulation significantly influence consumer behaviour, enhancing patient trust, satisfaction, and retention. Attention capturing techniques, while positively related, were not found to have a statistically significant effect on patient decision-making. Overall, the study's regression model indicated that neuromarketing strategies collectively explained 58.4% of the variance in consumer behaviour among healthcare users in Benin City.*

*The study concludes that incorporating neuromarketing strategies into healthcare marketing can improve patient experience, engagement, and loyalty, thereby contributing to the sustainable performance of healthcare organisations. Based on these findings, the study recommends that healthcare providers adopt emotionally engaging communication, sensory-rich environments, and memory-driven messaging to strengthen patient-provider relationships. The study also suggests further research on additional neuromarketing factors and cultural influences to deepen understanding of consumer behaviour in the Nigerian healthcare context.*

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

Neuromarketing is a field that applies neuroscience and psychological principles to marketing research. (Ariely & Berns, 2010). It aims to better understand how consumers' brains respond to marketing stimuli. Unlike traditional marketing that depends heavily on self-reported opinions and rational decision-making models, neuromarketing investigates unconscious emotional and cognitive responses that significantly influence consumer behaviour (Lee, Broderick, & Chamberlain, 2007; Morin, 2011).

The development of neuromarketing was motivated by growing dissatisfaction with conventional research tools like surveys and focus groups, which often fail to capture what consumers truly think or feel. People may not always be aware of the real reasons behind their choices, or they may tailor their responses to be socially acceptable (Alsharif, Salleh, & Baharun, 2021). Neuromarketing avoids these limitations by using interesting tools to measure real-time brain activity, emotional arousal, attention levels, and memory recall (Plassmann, Ramsøy, & Milosavljevic, 2012).

This field gained prominence following studies such as the Pepsi vs. Coca-Cola experiment, which showed that brand familiarity and emotional connection could influence brain activity more strongly than taste itself (Kühn et al., 2018). Such findings underscore that emotional engagement, memory, and sensory experience are often more influential in decision-making than rational assessment.

In the healthcare industry especially in developing countries like Nigeria, this insight holds potential. Healthcare delivery has changed positively from a provider-centric to a consumer-centric model, where patient experience plays a key role in determining satisfaction, loyalty,

and treatment adherence (Potluri & Angiating, 2018). Studies show that empathy, assurance, and emotional support often matter more to patients than physical infrastructure alone (Mahmoud et al., 2019).

Many Nigerian healthcare organisations still rely on traditional marketing approaches that fail to account for emotional and subconscious patient needs. Amidst systemic challenges like underfunding, overcrowding, and worker shortages, patients increasingly seek emotionally supportive and culturally relevant healthcare interactions (Nigeria Patient Safety Reports, 2025).

Neuromarketing provides a new lens through which healthcare providers can understand and improve the patient journey. Emotional branding, sensory marketing, and attention-driven messaging can help create stronger connections with patients, enhance trust, and increase recall of health information-key components of patient retention and adherence to care. For instance, sensory stimuli such as ambient sounds, calming colours, and pleasant scents have been found to ease patient anxiety and elevate perceived service quality (Onobrakpeya, 2024). Emotional narratives and consistent visual branding can also improve memory retention of provider identity and care instructions (Yadete & Kant, 2023).

## **1.2 Statement of the Problem**

Despite the growing relevance of emotional and psychological engagement in consumer behaviour, most healthcare marketing strategies in Nigeria continue to emphasize rational elements such as pricing, facilities, and service delivery timelines. This approach overlooks the subconscious emotional and sensory factors that often drive patient decisions, particularly in competitive and resource-constrained environments like Benin City (Potluri & Angiating, 2018; Mahmoud et al., 2019).

Patients in Nigeria increasingly expect emotionally engaging, culturally sensitive care in addition to clinical competence. However, satisfaction remains unstable, and patient loyalty is

low, partly because many healthcare institutions fail to address how people feel during their care experience (Mahmoud et al., 2019). Emotional engagement, sensory comfort, and memory-driven communication are key to fostering trust and long-term relationships, yet they are rarely prioritized in current healthcare communication strategies.

Conventional marketing models still dominate healthcare promotion in Nigeria, but these models are grounded in the assumption that consumers make decisions based on logic and information (Morin, 2011). In reality, research from neuromarketing shows that patients, like all consumers, often rely on emotions, sensory cues, attention mechanisms, and memory encoding when making choices about healthcare providers (Lee, Broderick, & Chamberlain, 2007; Plassmann, Ramsøy, & Milosavljevic, 2012).

For example, poor hospital environments- overcrowding, harsh lighting, noise, and lack of visual identity- can increase anxiety and reduce perceived quality of care, even if the medical treatment itself is effective (Onobrakpeya, 2024). Similarly, weak branding and uninspiring communication fail to capture patients' attention or leave lasting impressions, limiting message recall and reducing revisit intent (Yadete & Kant, 2023).

Although neuromarketing techniques such as emotional branding, sensory marketing, eye tracking, and memory-based storytelling are widely discussed in global literature, few empirical studies have explored their application in Nigeria's healthcare sector. Moreover, while such strategies have been shown to influence customer loyalty in industries like retail and telecommunications, their impact in healthcare- where emotional stakes are higher— remains under-researched in the Nigerian context.

This lack of research poses a serious problem. Without understanding the emotional and cognitive factors shaping healthcare choices, providers in Benin City may continue to struggle with patient dissatisfaction, low retention, and weak brand differentiation. This study seeks to fill that gap by investigating how neuromarketing strategies can be integrated into

healthcare marketing to enhance patient experience, engagement, loyalty, and trust in Benin City.

### **1.3 Research Questions**

The following questions were raised to guide the study

- i. what extent does emotional branding influence consumer behaviour in healthcare providing organisations in Benin City?
- ii. does sensory marketing impact the perception of healthcare services among consumers in Benin City?
- iii. what degree does attention capturing influence consumer decision-making in healthcare organisations in Benin City?
- iv. role does memory recall stimulation play in shaping patient loyalty and retention in healthcare organisations in Benin City?

### **1.4 Research Objectives**

The broad objective of this study is to examine the influence of neuromarketing on consumer behaviour in healthcare providing organisations in Benin City. Specifically, the objectives of this study are to:

- i. assess the extent to which emotional branding influences consumer behaviour in healthcare providing organisations in Benin City.
- ii. investigate how sensory marketing impacts the perception of healthcare services among consumers in Benin City.

iii. examine the degree to which attention capturing techniques influence consumer decision-making in healthcare organisations in Benin City.

iv. explore the role of memory recall stimulation in shaping patient loyalty and retention in healthcare organisations in Benin City.

### **1.5 Research Hypotheses**

i. H<sub>01</sub>: Emotional branding has no significant influence on consumer behaviour in healthcare providing organisations in Benin City.

ii. H<sub>02</sub>: Sensory marketing has no significant impact on the perception of healthcare services among consumers in Benin City.

iii. H<sub>03</sub>: Attention capturing techniques have no significant influence on consumer decision-making in healthcare organisations in Benin City.

iv. H<sub>04</sub>: Memory recall stimulation has no significant role in shaping patient loyalty and retention in healthcare organisations in Benin City.

### **1.6 Significance of the Study**

This study on the application of neuromarketing strategies in Nigerian healthcare will offer valuable insights to a wide range of stakeholders, including healthcare providers, marketing professionals, patients, and academic researchers.

**Healthcare Providers:** These stakeholders stand to gain practical strategies for improving patient satisfaction and loyalty. The study will offer evidence on how emotional branding, sensory design, and memory-driven communication can create more impactful patient experiences, even in the face of limited infrastructure and funding. These insights can help differentiate healthcare institutions in highly competitive environments like Benin City.

**Marketing Professionals:** Professionals in health communication and hospital marketing will be able to apply the study's findings to design campaigns that resonate more deeply with patients' emotional and psychological needs. Techniques such as attention-driven messaging and sensory-based branding can increase message recall and improve engagement across both digital and physical healthcare touchpoints.

**Patients:** While not directly involved in the marketing process, patients will benefit from more empathetic, patient-centered healthcare experiences. Emotional and sensory cues that reduce anxiety and enhance trust will lead to improved adherence, satisfaction, and loyalty.

**Academics and Researchers:** The study contributes to the limited body of literature on neuromarketing in healthcare, particularly within the Nigerian context. It will serve as a foundation for further empirical studies examining the relationship between subconscious consumer responses and service quality in African healthcare systems.

Ultimately, this research fills an important gap by highlighting how neuromarketing can be ethically and effectively applied in resource-constrained health environments, promoting both better health outcomes and sustainable healthcare branding strategies.

### **1.7 Scope and Delimitation of the Study**

This study focuses on the influence of neuromarketing strategies on patient engagement, satisfaction, and loyalty in selected healthcare institutions within Benin City, Edo State, Nigeria. The research will specifically examine how emotional branding, sensory marketing, attention-focused messaging, and memory-based storytelling shape patient perception and behavior. It will involve both public and private healthcare providers using marketing strategies to attract and retain patients. Data will be collected from a sample of healthcare users and professionals within the 2025 academic session.

The study is limited to the healthcare sector in Benin City and will explore only the core neuromarketing elements relevant to patient experience.

## **1.8 Definition of Terms**

**Neuromarketing:** A field that combines neuroscience, psychology, and marketing to study how consumers respond to marketing stimuli at an emotional and subconscious level.

**Emotional Branding:** A strategy that creates emotional connections between consumers and brands, fostering trust, loyalty, and long-term engagement.

**Sensory Marketing:** The use of stimuli such as sight, sound, smell, touch, and taste to influence consumer perceptions, emotions, and decisions.

**Attention Mechanisms:** Neuromarketing techniques used to capture and sustain a consumer's focus, increasing message retention and brand recall.

**Memory-Based Messaging:** Marketing approaches that enhance memory encoding and retrieval through storytelling, consistent branding, and emotional content.

**Patient Retention:** The ability of a healthcare provider to maintain ongoing relationships with patients over time, encouraging revisits and sustained loyalty.

**Healthcare Branding:** The process of positioning a healthcare service or institution in the minds of patients through consistent messaging, visual identity, and emotional value.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents a comprehensive review of existing literature related to the influence of neuromarketing on consumer behaviour in healthcare organisations. It critically examines concepts, relevant theories, and empirical studies to provide a clear understanding of how neuromarketing techniques affect consumer decision-making processes.

#### **2.2 Conceptual Review**

##### **2.2.1 Consumer Behaviour in Healthcare Organisations**

Consumer behaviour in the healthcare sector refers to the set of decisions, preferences, and actions individuals take when seeking, selecting, utilizing, and evaluating healthcare services. This behaviour encompasses how patients view healthcare institutions and practitioners, how they decide on care options, and the outcomes of those decisions (Kotler, Keller, Hoon, & Wee, 2022). Unlike consumer behaviour in other industries, healthcare decisions are often emotionally charged and involve significant personal investment, as they directly affect individuals' health and quality of life (Solomon, Russell-Bennett, & Previte, 2021).

The complexity of healthcare consumer behaviour is largely due to the interplay of multiple influencing factors. Among these, the perceived quality of care is critical. This includes not only medical outcomes but also the professionalism of health workers, their interpersonal communication, and patients' subjective experiences. A positive perception of care quality enhances trust, satisfaction, and loyalty, which ultimately encourages repeated use of services and long-term patient-provider relationships (Ladhari & Souiden, 2020).

Another significant determinant is accessibility, which includes the location of facilities, convenience of scheduling, wait times, and overall ease of navigating the health system.

Patients are more likely to engage with services that are nearby, time-efficient, and operationally flexible. Barriers to accessibility often result in lower utilization rates, especially among vulnerable populations (Obi-Ani, Onyema, & Okonkwo, 2021).

Affordability and insurance coverage also shape consumer choices. Out-of-pocket expenses, insurance availability, and the perception of financial burden significantly influence whether individuals seek medical care. High costs often discourage service use, thereby contributing to delayed treatment and deepening healthcare disparities (Adebayo et al., 2023).

Sociocultural factors such as cultural beliefs, traditional health practices, and social influence affect health-seeking behaviour. In many communities, decisions are made not just individually but in consultation with family or community leaders. Trust in traditional healers, preferences for same-gender providers, and societal norms around illness and treatment further shape consumer engagement (Okafor & Balogun, 2019).

Health literacy which is the ability to access, comprehend, and apply health-related information, plays a pivotal role in informed decision-making. Patients with higher health literacy are more capable of understanding treatment options and adhering to medical advice. Conversely, low literacy levels often lead to misunderstanding medical instructions, underutilization of services, and poor health outcomes (Adepoju, Albersen, & Akinyemi, 2022).

In this multidimensional landscape, neuromarketing has emerged as a valuable approach to decoding consumer behaviour in healthcare. By applying neuroscience tools to marketing, neuromarketing reveals consumers' unconscious preferences, emotional triggers, and cognitive reactions to marketing stimuli. This insight enables healthcare providers to refine their communication and service strategies (Karmarkar & Plassmann, 2019).

Emotional branding, which focuses on forming emotional bonds with patients, is particularly effective. Fostering empathy, comfort, and trust, emotional branding can reshape how

patients view and interact with healthcare brands, improving satisfaction and encouraging loyalty (Mogaji, 2021). Sensory marketing, which appeals to patients' visual, auditory, and olfactory senses, can improve the healthcare experience by reducing anxiety and making healthcare environments more welcoming (Marques & Ferreira, 2020).

In Nigeria, where health systems face challenges such as resource shortages, regional inequalities, and limited insurance coverage, understanding these consumer behaviours is essential. Research has shown that factors like perceived quality, cost, and geographical proximity are among the most significant determinants of healthcare provider choice among Nigerians (Ameh, Okonkwo, & Olayemi, 2022). Integrating neuromarketing principles into healthcare strategies, providers can better connect with patients emotionally and cognitively, thereby enhancing satisfaction, retention, and treatment outcomes.

### **2.2.2 Neuromarketing**

Neuromarketing is a growing interdisciplinary field that integrates neuroscience, psychology, and marketing to investigate how consumers respond to various marketing stimuli (Mansor & Mohd Isa, 2020). It employs methods drawn from cognitive neuroscience, such as functional magnetic resonance imaging (fMRI), electroencephalography (EEG), eye-tracking, facial coding, and galvanic skin response, to monitor brain activity, emotional arousal, and attention levels (JoVE, 2025). Unlike traditional marketing research, which relies heavily on self-reported data obtained through surveys or interviews, neuromarketing explores the implicit, subconscious processes that shape consumer behaviour (Lee, Broderick, & Chamberlain, 2007).

Conventional approaches to marketing often face limitations due to consumers' inability or unwillingness to articulate their true preferences and emotional responses. Self-report methods are susceptible to various biases, including social desirability, which may distort the authenticity of responses (Mansor & Mohd Isa, 2020). Neuromarketing addresses this

challenge by capturing physiological and neurological reactions, thereby offering more objective insights into how consumers perceive advertisements, packaging, product features, and branding elements (Iloka & Onyeke, 2020). These insights allow marketers to develop more emotionally engaging and cognitively appealing strategies that align with consumers' psychological responses (Plassmann, Ramsøy, & Milosavljevic, 2012).

Research has shown that a significant portion of decision-making occurs outside of conscious awareness. Zaltman (2003) suggests that up to 95 percent of consumer decisions are influenced by subconscious mental activity. This finding highlights the importance of understanding the emotional and intuitive processes that underpin consumer choices. Brain imaging studies have demonstrated, for example, that emotionally resonant advertisements tend to activate the amygdala and related brain regions involved in memory and value judgements. Such activations are often better predictors of consumer behaviour than verbalised intentions or preferences (Venkatraman et al., 2015).

Emotional branding represents a major application of neuromarketing, as businesses strive to create affective bonds between consumers and their brands. Research shows that emotional engagement significantly enhances brand recall and loyalty (Dooley, 2019). Research by Morris, Woo, Geason, and Kim (2002) confirmed that advertisements which evoke strong emotions are more memorable and persuasive, significantly impacting brand perception and purchase intention. Neuromarketing also contributes to the field of sensory marketing, which explores how sensory cues influence consumer perceptions and judgements. Eye-tracking technology, for instance, allows researchers to identify which elements of a visual design attract attention first and for how long. Such data inform decisions related to product placement, webpage layout, packaging design, and retail display optimization (Smidts et al., 2014). In this way, neuromarketing enables organizations to design visual and sensory experiences that more closely reflect consumer expectations and preferences (Lutyca, 2024).

Neuromarketing supports product development and innovation by enabling businesses to evaluate consumer responses to new product concepts before they are introduced to the market. Measuring levels of emotional engagement, cognitive workload, and attention allocation during product interaction, companies can identify the most appealing prototypes and reduce the likelihood of failure upon release.

Despite its advantages, neuromarketing presents ethical concerns, particularly with regard to consumer autonomy, data privacy, and the potential for manipulation. Critics have raised concerns that accessing subconscious responses for commercial purposes may infringe on individuals' mental privacy and informed consent. Stanton, Sinnott-Armstrong, and Huettel (2017) argue for the establishment of ethical frameworks to guide the responsible application of neuromarketing, ensuring transparency and the protection of consumer rights.

### **2.3.1 Emotional Branding**

Emotional branding refers to marketing strategies that create a deep emotional connection between a brand and its consumers by appealing to their feelings, desires, and aspirations. It transcends traditional branding by focusing not just on functional benefits but on fostering loyalty through emotional engagement (Thompson, Rindfleisch, & Arsel, 2006). Rather than focusing solely on product features or price, emotional branding aims to craft a meaningful narrative that aligns with the consumer's identity and values, thereby fostering a sense of belonging and trust (Crudu & MoldStud Research Team, 2024).

In healthcare settings, emotional branding plays a crucial role in shaping patient perceptions and experiences. It can influence how patients perceive the care environment, trust healthcare providers, and ultimately affect their choices and satisfaction (Gobé, 2001). When healthcare organizations successfully evoke emotions such as comfort, safety, and empathy, they can reduce patient anxiety and enhance the overall experience. This connection goes beyond

clinical outcomes to embrace the holistic well-being of patients, making emotional branding a powerful tool in patient-centered care.

Crafting messages and experiences that resonate emotionally, healthcare organizations can differentiate themselves in a competitive market, encouraging patients to identify personally with the brand. Emotional branding initiatives might include storytelling that highlights patient testimonials, compassionate staff behaviour, and the organization's commitment to community health, all designed to foster trust and loyalty. This emotional bond can lead to increased patient retention and advocacy, as satisfied patients are more likely to recommend the facility to others and maintain ongoing relationships (Morrison & Crane, 2007).

Emotional branding has been linked to improved organizational reputation and brand equity, which are essential for long-term success in healthcare. Engaging patients at an emotional level can lead to stronger brand associations and positive word-of-mouth, both critical factors in building sustainable patient relationships. Emotional branding also supports differentiation in an industry where clinical services may be similar, but patient experience and emotional engagement become key competitive advantages.

The integration of emotional branding within healthcare marketing strategies aligns with the growing emphasis on patient-centered care models, which prioritize empathy and emotional support as core components of treatment. By leveraging emotional branding, healthcare providers can create a more humanized image that resonates with patients' psychological and emotional needs, ultimately contributing to better health outcomes and organizational performance (Roberts, 2004).

### **2.2.3 Sensory Marketing**

Sensory marketing involves the deliberate engagement of consumers' senses- such as sight, sound, smell, touch, and taste- to affect perceptions, emotions, and behaviours toward a brand or service (Krishna, 2012). This approach recognizes that sensory experiences play a crucial role in shaping consumers' emotional responses and memories, which in turn influence their attitudes and behaviours. By appealing directly to the sensory system, marketers can create more immersive and memorable experiences that foster stronger brand connections.

In healthcare, sensory marketing is increasingly being recognized as a vital strategy to improve patient experience and satisfaction. Healthcare environments often evoke anxiety, fear, or discomfort; thus, carefully designed sensory stimuli can mitigate these negative emotions and contribute to a more comforting and reassuring atmosphere (Peck & Childers, 2003). Visual elements such as calming colour schemes- blues, greens, and earth tones- can promote relaxation and reduce stress levels. Ambient sounds like gentle music or natural sounds can mask clinical noises that might otherwise exacerbate patient anxiety.

The sense of smell is another powerful tool in sensory marketing within healthcare. Pleasant aromas, such as lavender or citrus, have been shown to have calming effects and can improve mood and perceived well-being, helping patients feel more at ease during their visits (Spence, Puccinelli, Grewal, & Roggeveen, 2014). Touch also plays a significant role; from the texture of waiting room furniture to the comfort of patient gowns and bedding, tactile experiences can convey care and attentiveness, enhancing overall patient satisfaction.

Sensory marketing helps create holistic and multisensory impressions that extend beyond the clinical competence of healthcare providers. These sensory cues work synergistically to foster an empathetic and welcoming atmosphere, making patients feel valued and cared for on multiple levels. Such environments encourage positive emotional responses that can influence patients' perceptions and healthcare decisions (Hultén, 2011). This multisensory

approach also supports the development of brand equity for healthcare providers by making experiences more distinctive and memorable.

The effectiveness of sensory marketing in healthcare is backed by research demonstrating that sensory congruence- where sensory inputs are aligned with the brand's identity and message- enhances patient trust and loyalty (Krishna, 2012). Healthcare organizations that thoughtfully integrate sensory marketing can differentiate themselves in a competitive landscape, improving patient retention and advocacy. Positive sensory experiences can facilitate better communication, reduce perceived pain, and enhance compliance with treatment protocols, thereby contributing to improved health outcomes (Spence et al., 2014).

#### **2.2.4 Attention Capturing Techniques**

Attention capturing techniques refer to deliberate strategies employed by marketers to attract and sustain consumer focus amidst a multitude of competing stimuli in the environment. These techniques are essential in breaking through the clutter of information that consumers are exposed to daily. Such strategies typically involve the use of vivid and striking imagery, compelling storytelling, distinctive auditory cues, and interactive or immersive elements designed to engage the target audience actively (Pieters & Wedel, 2004). By capturing attention effectively, marketers increase the likelihood that their message will be noticed, processed, and remembered. Within healthcare marketing, the importance of attention capturing techniques cannot be overstated. Patients often encounter numerous messages related to health services, disease prevention campaigns, and treatment options, making it imperative that key information stands out and resonates. The use of bold visuals and relatable narratives can draw patients' attention to vital health warnings or promotional offers for screenings and vaccinations. Additionally, employing distinct sounds, such as memorable jingles or alert tones, can further enhance message salience in multimedia campaigns (Wedel & Pieters, 2007).

Effective attention capture not only facilitates initial noticeability but also supports better recall and comprehension, both of which are crucial in healthcare contexts where patients may need to make timely and informed decisions. In clinical or waiting-room settings, attention-capturing materials can guide patients towards understanding complex health information or treatment choices, thereby promoting patient empowerment and adherence to medical advice (Lang, 2000). Interactive techniques, such as touchscreen kiosks or augmented reality applications, can engage patients more deeply, transforming passive reception into active participation and learning.

The psychology behind attention capturing reveals that stimuli that are novel, emotionally charged, or personally relevant are more likely to engage and hold attention. Healthcare marketers can capitalise on this by tailoring messages that connect with patients' values, fears, and aspirations, thereby creating a meaningful context for the information presented. The use of repetition and rhythm in messaging can reinforce attention over time, ensuring that critical health communications remain top of mind (Pieters & Wedel, 2004).

The strategic use of attention capturing techniques in healthcare marketing enhances the effectiveness of communication efforts by ensuring that messages cut through distractions, are better understood, and ultimately lead to desired health behaviours. These techniques are integral in fostering patient engagement, improving health literacy, and supporting public health goals.

## **2.2.5 Memory Recall Stimulation**

Memory recall stimulation refers to the deliberate application of techniques aimed at enhancing the ability of consumers-patients in the healthcare context- to retrieve and remember a brand, service, or experience now of decision-making (Schacter, 1996). This cognitive process is fundamental to building and sustaining long-term patient-provider relationships, as the ease and positivity with which patients recall previous healthcare interactions significantly influence their future choices and behaviours.

In healthcare, where trust and continuity of care are paramount, the stimulation of memory recall plays a pivotal role in patient loyalty and retention. Patients tend to favour providers whose services they remember not only clearly but also positively, encompassing both tangible outcomes and intangible emotional experiences (Zaltman, 2003). Such memories serve as heuristics or mental shortcuts that simplify complex healthcare decisions, particularly under stressful conditions, and help patients feel more confident and secure about their choices.

Techniques to stimulate memory recall in healthcare are multidimensional. One key method is consistent and coherent branding that reinforces recognition over time. This involves the use of distinctive logos, colour schemes, slogans, and messaging across all patient touchpoints- from advertising and websites to appointment reminders and physical signage within healthcare facilities. Repetition of these brand elements strengthens patients' mental associations and facilitates easier retrieval of brand-related information (Keller, 2013).

Another critical dimension lies in the quality-of-service encounters. Memorable patient experiences often stem from interactions characterised by empathy, respect, personalised care, and effective communication. When healthcare providers engage patients meaningfully, acknowledge their concerns, and provide clear explanations, these positive encounters are encoded more deeply in memory (Eagle & Dahl, 2015). For example, a doctor who takes

time to listen attentively or a nurse who shows genuine kindness can create emotional memories that patients recall with fondness, influencing future preference and loyalty.

Personalised follow-ups are also effective tools in reinforcing memory recall. These may include post-appointment calls, tailored health advice, personalised newsletters, or digital reminders for medication or check-ups. Such communications not only remind patients of the provider's care but also demonstrate ongoing concern for their well-being, which strengthens the emotional bond and recall strength (Eagle & Dahl, 2015). The use of digital health platforms and mobile apps further enhances these opportunities by enabling timely, customised interactions.

Memory recall in healthcare is also enhanced through multisensory and emotional branding strategies. Research indicates that memories tied to sensory stimuli—such as a calming scent in the waiting room or a comforting visual environment—are more vivid and durable (Krishna, 2012). Emotional experiences, particularly those that involve feelings of safety, trust, and satisfaction, are processed in brain regions closely linked to memory storage, making them more accessible during recall (Thompson, Rindfleisch, & Arsel, 2006). Therefore, healthcare providers that engage patients on sensory and emotional levels create more robust memory traces, which positively impact patient retention.

Cognitive psychology emphasises the role of associative memory networks in recall. When patients encounter cues similar to those experienced previously—such as logos, colours, or phrases—their memory networks are activated, facilitating retrieval of the broader experience (Schacter, 1996). This phenomenon underscores the importance of creating consistent, cue-rich environments both online and offline.

Effective memory recall stimulation also contributes to word-of-mouth promotion, a critical factor in healthcare reputation management. Patients who recall positive experiences are more likely to recommend their providers to friends and family, thus amplifying patient

acquisition and loyalty through social proof (Keller, 2013). Sustained recall improves patient adherence to medical advice and treatment plans by reinforcing the perceived benefits and trustworthiness of the provider.

### **Relationship between consumer behaviour and Neuromarketing**

Consumer behaviour refers to how individuals perceive, decide on, purchase, use, and dispose of goods and services. It includes conscious and unconscious processes such as perception, attention, emotion, memory, decision-making, and post-purchase evaluation. Neuromarketing offers methods to observe what happens beneath conscious awareness. It reveals internal processes that traditional tools like questionnaires and interviews often miss. The relationship between consumer behaviour and neuromarketing consists of several interacting dimensions.

One dimension is attention and perception. Neuromarketing tools measure what captures a consumer's attention and how stimuli are perceived. EEG-based studies have shown that measures such as frontal alpha asymmetry and certain event-related potential components reliably predict consumer preference and differentiate positive from negative responses prior to conscious awareness (Byrne, Bonfiglio, Rigby, & Edelstyn, 2022). Another EEG study showed that a consumer-grade device with fewer electrodes still can distinguish preferences among ad components such as music, imagery, and messaging (Anute, 2025).

A second dimension is emotional response and affective engagement. Emotions play a central role in shaping consumer behaviour. Neuromarketing research demonstrates that emotional branding and stimuli evoke neural responses that enhance brand loyalty and emotional connection. A study in Malaysia found that emotional branding contributes significantly to customer retention among startups by creating emotional bonds, especially where brand recognition is limited (Neuromarketing and the Role of Emotions in Customer Retention for Startups, 2025). Furthermore, EEG studies indicate that emotional valence and arousal

measured through brain signals correlate with purchasing intentions (Systematic Review of Prediction of Consumer Preference using EEG measures, 2022).

Memory is another critical element. Consumers must remember brand messages, experiences, and product attributes for behaviour to be influenced over time. Neuromarketing tools show memory recall can be triggered by neural markers and repeated exposure. A review on EEG use showed that marketers can influence memory retention by tailoring stimuli that engage cognitive and affective regions of the brain (Review on Use of EEG for Factors Affecting Consumer Behavior, 2024). Advertising campaigns using repeated exposure, sensory cues, and emotional storytelling are more likely to imprint memory and guide future purchase behaviour.

Decision making and choice behaviour are also deeply influenced. Neuromarketing research demonstrates that neural signals and physiological responses can predict actual choices before consumers become fully aware of their own preferences. An intelligent neuromarketing system using EEG signals predicted future consumer choice in e-commerce settings (2022). Also, systematic EEG-based reviews show that combining EEG with machine learning allows for better modelling of consumer preferences than self-report alone (Byrne et al., 2022).

External and contextual factors moderate the relationship. Culture, social influence, product context, and marketing stimuli such as visuals, packaging, and environment all interface with neuromarketing measures to shape consumer behaviour. The “Review on Use of EEG for Factors Affecting Consumer Behavior” (2024) identifies internal characteristics (like affect and cognition), external environment (such as social and cultural factors), and marketing stimuli (product, price, promotions) as the three dimensions influencing behaviour.

Neuromarketing enriches our understanding of consumer behaviour by making visible what lies beneath explicit actions and reports. It complements traditional models by adding

neurological, emotional, and attentional layers. (Mansor & Mohd Isa, 2020). In your work you can map out consumer behaviour at three levels: observable behaviour, self-reported attitudes, and neurological/emotional responses. These levels interact. Attention determines what is perceived; emotion determines what is valued; memory determines what is recalled; decision making determines action. Understanding these links helps design marketing stimuli and communication strategies that better align with how consumers think and feel.

## **2.3 Theoretical Review**

This study on NeuroMarketing in healthcare draws on four foundational psychological and communication theories that illuminate how marketing stimuli are cognitively and emotionally processed by patients, ultimately shaping their healthcare decisions and behaviours. These theories- Elaboration Likelihood Model (ELM), Dual Process Theory, Emotional Contagion Theory, and Cognitive Load Theory- offer comprehensive insights into the mechanisms underlying consumer responses to neuro-boration Likelmarketing strategies in clinical settings.

### **2.3.1 Elaboration Likelihood Model (ELM)**

The Elaboration Likelihood Model (ELM), developed by Petty and Cacioppo (1986), remains one of the most influential models in explaining how individuals are persuaded through two distinct cognitive routes: the central route, which involves thoughtful and analytical message processing, and the peripheral route, which relies on superficial cues such as source credibility, visual appeal, and emotional tone. This dual-process model is especially relevant in healthcare neuromarketing, where patient decision-making is often shaped by both logical evaluation and affective stimuli.

Recent research has supported the application of ELM in health communication. For instance, Lam et al. (2022) found that infographics that are well-designed and aligned with audience

expectations can activate central processing by improving comprehension, especially when individuals are motivated to process the content. At the same time, when cognitive overload or emotional stress is present- as is common in healthcare settings- individuals tend to default to the peripheral route. In such scenarios, cues like attractive visuals, empathetic messaging, and the credibility of the source become key drivers of persuasion (Lam et al., 2022).

In a randomized controlled trial, Khodaveisi et al. (2024) demonstrated that patients who received infographic-based education about diabetes management showed significantly higher health literacy scores than those who received traditional pamphlets. This suggests that infographics, when thoughtfully constructed, can engage both the central and peripheral routes of persuasion (Khodaveisi et al., 2024). Similarly, a co-design study by van Vliet et al. (2023) involving cancer patients showed that visual tools that combine emotional tone with factual content led to better understanding and stronger patient-clinician dialogue. This aligns with the ELM's proposition that emotionally engaging content can enhance both attention and retention, even among low-literacy or emotionally burdened populations (van Vliet et al., 2023).

Additionally, immersive technologies like virtual reality (VR) and augmented reality (AR) are emerging as powerful tools in healthcare marketing that simultaneously activate both ELM routes. As noted by Jayawardena et al. (2023), these technologies evoke emotional involvement (peripheral route) while allowing interactive engagement with detailed content (central route), thereby increasing the depth of message processing.

Healthcare communicators must therefore tailor their messages to individual patient profiles. Patients with high health literacy and intrinsic motivation are more likely to engage via the central route and require messages that include scientific evidence, data, and logical arguments. In contrast, patients under stress or with lower literacy benefit more from

affective, peripheral cues that reduce cognitive load while still delivering persuasive messages (Lam et al., 2022; Jayawardena et al., 2023).

### **2.3.2 Dual Process Theory**

Dual Process Theory (Evans & Stanovich, 2013) fundamentally posits that human cognition operates through two distinct but interacting systems: System 1 and System 2. System 1 is characterised by fast, automatic, intuitive, and affect-driven thinking. It operates largely outside conscious awareness, allowing individuals to make rapid judgements based on heuristic cues and emotional responses. System 2 is slow, analytical, effortful, and deliberate, requiring conscious attention and logical reasoning to evaluate complex information and make informed decisions. This theoretical framework has become increasingly influential in both neuroscience and consumer behaviour research, offering a nuanced explanation for how decisions- particularly those involving health and wellbeing- emerge from the dynamic interplay between emotion and cognition (Kahneman, 2018).

In the context of healthcare NeuroMarketing, the practical application of Dual Process Theory centres on engaging System 1 initially to create immediate emotional connections and reduce cognitive resistance. Sensory marketing elements such as carefully chosen colours, soothing smells, ambient sounds, and tactile experiences are designed to activate System 1 responses by eliciting subconscious affective reactions. These sensory inputs help generate trust, comfort, and a sense of safety- critical factors in healthcare environments where anxiety and uncertainty are common (Martinez & Lee, 2023). The calming blue hues in hospital waiting areas or the subtle scent of lavender in treatment rooms can mitigate stress and prepare patients emotionally for more rational, System 2-based processing.

Emotional branding also plays a vital role in priming System 1 by tapping into deep-seated desires, fears, and aspirations, making healthcare brands more relatable and memorable on an affective level. When patients experience a positive emotional connection with a healthcare provider, their initial intuitive receptivity increases, lowering psychological barriers to engage with subsequent information. This ‘priming’ effect is critical as it sets the stage for System 2 to process detailed treatment explanations, risks, benefits, and other factual content in a calmer and more focused mental state.

Recent advances in neuroimaging have empirically supported this dual-process interaction within healthcare decision-making. Studies utilizing functional magnetic resonance imaging (fMRI) have shown that emotional stimuli preferentially activate limbic structures such as the amygdala and hippocampus, regions associated with affect and memory formation, which underpin System 1 activity. When patients engage in deliberative reasoning, increased activation is observed in prefrontal cortical areas - particularly the dorsolateral prefrontal cortex- known to mediate executive functions and logical analysis (Williams et al., 2022). This neurobiological evidence affirms that effective healthcare NeuroMarketing must design stimuli that simultaneously address both neural circuits to optimise patient outcomes.

Dual Process Theory highlights the risks of imbalance- overreliance on System 1 can lead to impulsive, emotionally biased decisions that may overlook critical medical facts, whereas excessive dependence on System 2 can overwhelm patients, causing decision fatigue or disengagement. Therefore, neuromarketing strategies must carefully calibrate the interplay between the two systems to facilitate a balanced decision-making process. Virtual reality tours of medical facilities can emotionally engage patients (System 1) while providing interactive, detailed explanations of procedures (System 2), thus accommodating varied cognitive and emotional needs (Chen et al., 2023).

This theory provides a robust framework for understanding how healthcare communications can be tailored to enhance patient experience, foster trust, and improve adherence to medical advice by respecting the dual nature of human cognition.

### **2.3.3. Emotional Contagion Theory**

Emotional Contagion Theory, first introduced by Hatfield, Cacioppo, and Rapson (1993), posits that emotions can be unconsciously transferred between individuals through subtle nonverbal signals such as facial expressions, vocal tone, gestures, and body language. This transmission of affect occurs rapidly and often without conscious awareness, significantly shaping interpersonal dynamics and influencing decision-making processes. The theory underscores the inherently social nature of emotions and the powerful role of emotional mimicry in synchronising emotional states across individuals in a shared environment.

Within healthcare marketing, the scope of emotional contagion extends well beyond face-to-face interactions between patients and providers. It encompasses the emotional impact of marketing communications, environmental cues, and service experiences that collectively influence how patients perceive and respond to healthcare brands. For example, the use of emotionally charged patient testimonials, stories of recovery, or empathetic messaging in advertisements can evoke strong affective responses in prospective patients, cultivating feelings of trust, hope, and reassurance. Such emotional engagement is critical in healthcare contexts where patients often face fear, uncertainty, and vulnerability (Nguyen & Chen, 2021). By eliciting positive emotions through storytelling, healthcare marketers can effectively reduce psychological barriers to care and enhance patient receptivity.

Environmental design also plays a pivotal role in facilitating emotional contagion. Healthcare settings that incorporate sensory elements- such as warm, inviting lighting, soothing background music, calming colour schemes, and the friendly demeanour of staff-create an affective atmosphere that patients naturally ‘catch.’ This emotional climate not only eases anxiety and discomfort but also fosters a sense of belonging and safety, which are essential for patient satisfaction and engagement (Sharma & Joshi, 2023). These subtle yet powerful environmental stimuli function as affective ‘signals’ that can synchronise patient moods with those of caregivers and the broader healthcare brand experience, thereby influencing patient behaviours and decision-making.

Recent experimental research corroborates the significance of emotional contagion in healthcare NeuroMarketing. Patel et al. (2022) demonstrated that marketing materials designed to elicit emotional resonance- through vivid imagery, empathetic language, and positive affective cues- significantly enhanced patients’ satisfaction and brand loyalty. The study highlighted how emotional contagion reinforces memory encoding and recall by strengthening the emotional salience of healthcare experiences, making patients more likely to remember and prefer certain providers. Such findings underscore the importance of creating emotionally evocative content that resonates deeply with patients’ psychological needs, fostering empathetic patient-provider relationships and sustained engagement.

Contemporary neuroscience research reveals the neurobiological mechanisms underlying emotional contagion. Mirror neuron systems, which activate both when an individual experiences an emotion and when observing another’s emotional expression, facilitate this unconscious emotional transmission (Rizzolatti & Sinigaglia, 2016). In healthcare settings, these neural processes enable patients to ‘catch’ the emotional states conveyed by healthcare staff or marketing stimuli, thereby influencing their emotional wellbeing and treatment adherence. neuromarketing strategies that consciously leverage these insights can design

communications and environments that enhance positive emotional contagion, ultimately improving patient trust, satisfaction, and health outcomes.

### **2.3.4 Cognitive Load Theory (CLT)**

Cognitive Load Theory (CLT), developed by Sweller, Ayres, and Kalyuga (2019), explains that human working memory has a limited capacity, and when too much information is presented at once, it can lead to cognitive overload. This makes it difficult for individuals to understand, remember, or use the information effectively. CLT identifies three types of cognitive load: intrinsic load (the complexity of the information itself), extraneous load (how the information is presented), and germane load (the effort required to understand and internalize the information).

In healthcare communication, patients are often exposed to complex medical terms, emotional stress, and time-pressured decisions. This increases both intrinsic and extraneous load, making it harder for them to process information. Skulmowski and Xu (2023) found that when healthcare platforms were cluttered or poorly structured, users experienced higher mental effort, leading to decreased understanding. Similarly, the Agency for Healthcare Research and Quality (AHRQ, 2024) highlighted that cognitive overload among healthcare providers and patients can lead to diagnostic and decision-making errors.

To reduce this overload, recent studies recommend simplifying healthcare information using visual tools. Khosravi, Rezvani, and Wiewiora (2022) showed that diabetic patients understood treatment options better when infographics were used instead of plain text. Mayer,

Fiorella, and Stull (2020) also noted that when multimedia health content was presented in simple, organized formats, patients retained more information and made more confident decisions.

Neuromarketing strategies also align with CLT principles by using calming colors, meaningful visuals, and supportive audio cues to reduce extraneous load. According to Cai, Tang, and Luo (2023), emotionally neutral designs in health messages made information easier to process and remember. Alhadreti and Mayhew (2021) similarly found that elderly patients responded more positively to digital health tools that used chunked information and soft color schemes, reducing cognitive strain.

Personalized health communication also plays an important role in managing cognitive load. Jansen et al. (2021) discovered that when healthcare providers adapted message complexity to patients' health literacy levels, patient comprehension and adherence improved. In another study, Wang, Liu, and Zhang (2023) demonstrated that mobile health apps which presented information in small, manageable modules helped patients with chronic conditions remain engaged and less overwhelmed.

When healthcare communication is poorly structured or overly technical, it can cause patients to withdraw or make poor health choices. This is especially dangerous for those managing long-term illnesses. Skulmowski and Xu (2023) emphasized that reducing unnecessary mental effort and supporting germane cognitive processing, such as encouraging patients to build mental models, is essential for better outcomes.

Scholars like Dr. Jacqueline Nwando Olayiwola have advocated for healthcare systems that are both technologically efficient and culturally responsive. Her work highlights how digital health

tools must be designed to account for social and emotional burdens, especially among marginalized communities (Olayiwola, 2021). In a

related study, Green et al. (2024) found that Black older adults preferred voice-assisted recovery tools that used culturally sensitive language, which made them feel more supported and less mentally taxed.

## **2.4 Theoretical Framework**

This study is anchored on several theoretical foundations that combines four interrelated theories: the Elaboration Likelihood Model (ELM), Dual Process Theory, Emotional Contagion Theory, and Cognitive Load Theory (CLT). Together, these theories provide a holistic lens for understanding how neuromarketing stimuli shape consumer behaviour in healthcare settings, explaining both the emotional and cognitive mechanisms through which patients perceive, process, and respond to healthcare marketing efforts.

### **2.4.1 Elaboration Likelihood Model (ELM)**

The Elaboration Likelihood Model, developed by Petty and Cacioppo (1986), explains how individuals process persuasive messages through two distinct routes: the central route and the peripheral route. The central route involves deep, thoughtful processing of information, while the peripheral route depends on surface-level cues such as emotion, visual appeal, and source credibility. In healthcare marketing, most patients do not engage in analytical evaluation of promotional information, especially when faced with emotional or stressful health concerns.

This theory is adopted because it provides a strong explanation for how emotional branding and sensory marketing affect patient decision-making. In contexts like Benin City, where literacy levels and emotional sensitivity vary, peripheral cues such as empathetic communication, colours, and visuals often shape patients' trust and preferences more than factual details. When a hospital uses emotionally engaging messages or soothing environmental stimuli, it triggers positive affective responses that enhance satisfaction and loyalty. This connection between message design, emotional appeal, and consumer response justifies the model's inclusion, as it directly supports the first two objectives of this study,

examining how emotional branding and sensory marketing influence patient behaviour and perception.

#### **2.4.2 Dual Process Theory**

Dual Process Theory, advanced by Evans and Stanovich (2013), posits that human decision-making operates through two cognitive systems. System 1 is fast, intuitive, and emotionally driven, while System 2 is slow, logical, and deliberate. The theory holds that most consumer decisions, particularly under emotional or uncertain conditions, rely primarily on intuitive responses.

This theory is adopted because it helps explain how attention-capturing cues and emotional messages in healthcare advertising influence both intuitive and reflective thought processes. For instance, calming imagery or reassuring tones can quickly generate emotional trust through System 1, while structured service information later appeals to System 2 for rational validation. In the context of healthcare organisations in Benin City, patients often depend on intuitive impressions when selecting facilities or evaluating service quality. Dual Process Theory thus provides the psychological basis for understanding how emotional and rational elements interact in neuromarketing, directly supporting the study's investigation of attention and decision-making.

#### **2.4.3 Emotional Contagion Theory**

Emotional Contagion Theory, proposed by Hatfield, Cacioppo, and Rapson (1993), describes how individuals unconsciously absorb and mirror the emotions of others. In healthcare environments, patients are sensitive to the emotional tone conveyed by staff, advertisements, and the physical environment. The presence of empathy, warmth, and reassurance often determines whether patients feel valued and secure.

This theory is adopted to explain how emotional branding and sensory marketing influence patients' psychological states and loyalty. When healthcare providers use emotionally

resonant branding, friendly visuals, or calming environmental cues, they transmit positive emotional energy that patients subconsciously replicate. Studies have shown that such affective synchronization fosters trust and long-term engagement with healthcare brands (Feng, Smith, & Okeke, 2024). Emotional Contagion Theory, therefore, provides the affective grounding for understanding how neuromarketing strategies generate emotional attachment and behavioural loyalty, aligning with the first and fourth objectives of this study.

#### **2.4.4 Cognitive Load Theory (CLT)**

Cognitive Load Theory, introduced by Sweller, Ayres, and Kalyuga (2019), emphasizes that human working memory has limited capacity. When information or visual content exceeds this capacity, comprehension and retention decline. Effective communication, therefore, requires the reduction of unnecessary cognitive burden and the structuring of messages in ways that support meaningful learning.

This theory is adopted because it directly relates to the study's focus on attention and memory recall. Healthcare messages, brochures, or online content often contain complex medical terms or excessive detail that overwhelm patients. Applying CLT principles—such as simplifying information, organizing visuals, and highlighting key emotional cues—helps patients retain essential details about healthcare services. Empirical research supports this, showing that clarity and simplicity in design improve recall and satisfaction in patient communication (Wang, Liu, & Chen, 2023). CLT thus provides the structural foundation for understanding how neuromarketing strategies can enhance memory retention and sustained attention among healthcare consumers.

The integration of these four theories provides a comprehensive explanation of how neuromarketing influences consumer behaviour in healthcare organisations. The Elaboration

Likelihood Model and Dual Process Theory describe the cognitive and emotional routes through which patients interpret persuasive stimuli. Emotional Contagion Theory explains the affective transmission that fosters trust and attachment, while Cognitive Load Theory emphasizes the importance of simplicity and clarity in sustaining attention and memory. Together, these theories form a coherent framework that aligns with the study's core variables, emotional branding, sensory marketing, attention, and memory recall, offering a scientifically grounded understanding of how neuromarketing drives patient engagement, perception, and loyalty in Benin City.

## **2.5 Empirical Review**

### **2.5.1 Emotional Branding and Patient Engagement**

Rodrigues, Costa, and Martins (2021) examined the impact of emotional branding on patient loyalty in the Portuguese healthcare sector. The study adopted a quantitative survey approach involving 450 hospital patients across four private hospitals in Lisbon. Findings revealed that emotional branding components such as empathy, trust, and personalized interaction significantly enhanced patient loyalty and satisfaction. The authors recommended that healthcare providers prioritize emotional storytelling and empathy-driven service delivery to strengthen long-term relationships with patients (Rodrigues et al., 2021).

Khan, Park, and Lee (2022) investigated the effects of narrative-driven healthcare advertising on patient commitment to treatment within South Korea's hospital industry. The researchers employed an experimental research design with 320 participants who viewed emotionally charged and informational advertisements. Results showed that narrative-based advertisements generated stronger emotional connections and greater treatment adherence compared to rational messages. They recommended integrating emotional narratives into hospital marketing strategies to deepen patient engagement (Khan et al., 2022).

Lim and Lee (2023) explored the role of emotional branding on patient perceptions of care quality in Singapore's healthcare system using a cross-sectional survey of 510 patients. The findings indicated that emotional branding positively influenced perceived quality and trust in healthcare providers. The researchers advised healthcare marketers to maintain consistent emotional brand identity across online and offline platforms to enhance perceived service value (Lim & Lee, 2023).

Gupta, Sharma, and Verma (2023) studied emotional branding and chronic disease management adherence in India's tertiary healthcare institutions. The study applied a mixed-method design involving surveys and interviews with 250 patients managing diabetes and hypertension. Results showed that emotional branding through personal follow-ups and compassionate messaging improved adherence to treatment. The authors recommended long-term patient-provider emotional engagement through follow-up communication and motivational counseling (Gupta et al., 2023).

Jang, Ko, and Choi (2024) assessed emotional branding in digital healthcare platforms within South Korea, employing a survey design with 680 online healthcare users. The study revealed that emotion-oriented website interfaces, colors, and empathetic messaging improved patient satisfaction and trust. They recommended digital healthcare platforms incorporate emotional design principles to enhance patient, provider connection (Jang et al., 2024).

### **2.5.2 Sensory Marketing and Patient Comfort**

Wang, Zhang, and Chen (2022) explored the effects of sensory marketing on patient anxiety in Chinese public hospitals using an experimental design with 310 inpatients. Findings revealed that calming ambient sounds, pastel color schemes, and pleasant scents reduced anxiety and improved perceived care quality. The study recommended hospital

administrators employ multi-sensory design principles to improve patient experience (Wang et al., 2022).

Patel and Sharma (2023) investigated the influence of sensory cues on service quality perception in Indian outpatient clinics using a descriptive survey of 400 respondents. Results indicated that visual appeal, soft music, and mild fragrances elevated patients' trust and comfort levels. The authors recommended hospitals adopt a multi-sensory marketing approach to enhance patient satisfaction (Patel & Sharma, 2023).

Nguyen and Tran (2023) conducted research on sensory marketing and perceived service quality within Vietnamese public hospitals using a quantitative survey of 619 patients and qualitative interviews with 20 administrators. Findings showed that sensory design elements, especially color and scent, significantly improved patient perception of care. They recommended that healthcare managers consider environmental aesthetics in patient-centered design (Nguyen & Tran, 2023).

Yoon et al. (2023) examined sensory marketing interventions and post-surgical care adherence in Korean orthopedic hospitals using an experimental design involving 280 patients. Findings indicated that patients exposed to soothing colors and gentle lighting showed higher compliance with post-surgery care. The authors recommended designing sensory-oriented hospital recovery rooms to foster emotional healing and adherence (Yoon et al., 2023).

### **2..5.3 Attention-Capturing Techniques and Patient Awareness**

Park and Kim (2021) studied interactive health communication and patient attention in South Korea's primary healthcare centers. Using a randomized experimental design with 240 patients, the research found that interactive visual displays significantly improved message retention and health awareness. The authors recommended embedding interactivity and visual dynamism in healthcare education materials (Park & Kim, 2021).

Jones, Smith, and Brown (2022) analyzed the effect of storytelling and visuals on patient attention in the UK healthcare marketing industry. A content experiment involving 300 participants revealed that visual storytelling increased message engagement by over 40% compared to text-based campaigns. They advised healthcare communicators to use narrative videos and imagery to attract and sustain patient attention (Jones et al., 2022).

Ramirez and Wilson (2023) assessed digital campaign effectiveness and vaccination uptake in the United States public health sector. The survey of 3,278 adults exposed to health advertisements revealed that high-frequency, attention-grabbing messages significantly improved vaccination rates. The authors recommended applying emotionally charged, repetitive messages for better public health outcomes (Ramirez & Wilson, 2023).

Kim and Sundar (2024) explored personalized video messages and patient attention in telehealth communication across South Korea's digital health sector. The experimental study involving 270 participants showed that personalization increased attention and recall by 38%. They recommended healthcare organizations employ personalized digital content to enhance message engagement (Kim & Sundar, 2024).

### **2.5.3 Memory Recall Stimulation and Health Information Retention**

Ahmed and Rahman (2022) investigated personalized follow-up communication and memory recall in Bangladesh's private hospitals using a quantitative survey of 350 patients. Findings revealed that SMS and email reminders improved patient recall of medication and follow-up schedules. The researchers recommended integrating reminder systems into digital healthcare platforms for sustained engagement (Ahmed & Rahman, 2022).

Ng and Lee (2023) studied the impact of digital education tools on patient recall in Singapore's outpatient facilities through a survey of 500 patients. Results showed that interactive learning modules increased information retention and understanding of health

conditions. The study recommended hospitals develop digital education tools tailored to patient literacy levels (Ng & Lee, 2023).

Silva, Andrade, and Oliveira (2023) examined the effect of branded materials on memory retention in Brazilian healthcare clinics using a survey of 290 patients. Findings indicated that branded appointment cards and consistent visuals improved recall of healthcare provider identity and instructions. The authors recommended consistent branding across patient materials to enhance recognition (Silva et al., 2023).

Yue et al. (2023) evaluated mnemonic devices in health communication materials in Chinese tertiary hospitals through a quasi-experimental study with 360 participants. Findings revealed that mnemonic visuals and repetition enhanced patient retention of complex information. They recommended embedding mnemonic cues in healthcare materials to improve adherence (Yue et al., 2023).

Fernandez and Gomez (2024) investigated memory recall and patient advocacy behavior in Spanish healthcare institutions using a quantitative survey of 410 patients. Results showed that better recall of healthcare experiences led to stronger advocacy intentions and word-of-mouth recommendations. They advised hospitals to maintain consistent and emotionally engaging patient experiences to improve recall and advocacy (Fernandez & Gomez, 2024).

### **2.5.5 Summary of Empirical Findings**

These studies demonstrate that neuromarketing principles are effective in enhancing emotional engagement, patient comfort, attention retention, and memory recall within healthcare contexts. Emotional branding fosters trust and adherence, sensory marketing enhances comfort and satisfaction, attention-capturing techniques improve message retention, and memory recall stimulation strengthens long-term loyalty. Collectively, these findings

underscore the practical and psychological importance of neuromarketing in healthcare marketing and patient-centered service delivery.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.0 Introduction**

This chapter presents the methodology adopted for the study. It describes the research design, population and sampling technique, sample size, sources of data, research instrument, validity and reliability of the instrument, model specification, and methods of data collection and analysis used in the study.

#### **3.1 Research Design**

The study adopted a descriptive survey of research design. This design was considered suitable because it enabled the researcher to collect data from a cross-section of healthcare

consumers and professionals in Benin City to describe and examine the influence of neuromarketing strategies on consumer behaviour. The design also permitted the use of quantitative methods for analysing data and testing the study's hypotheses.

### **3.2 Population of the Study**

The population of the study comprised patients and healthcare staff of both public and private healthcare institutions in Benin City, Edo State, Nigeria. These groups were chosen because they are directly involved in the healthcare service process and can provide reliable and relevant information on healthcare experiences and marketing communications.

### **3.3 Sample Size and Sampling Technique**

The study employed a stratified random sampling technique to ensure proper representation of both public and private healthcare institutions. Patients and staff were stratified according to the type of healthcare facility they were affiliated with, after which respondents were randomly selected from each stratum. A total of 100 respondents were selected for the study.

### **3.4 Sources of Data**

This study relied primarily on primary data, which were collected through the administration of structured questionnaires to healthcare consumers and staff of selected hospitals in Benin City, Edo State. The choice of primary data was informed by the need to obtain first-hand, reliable, and context-specific information on how neuromarketing strategies influence patient perceptions and healthcare service decisions. Respondents were selected using a stratified random sampling technique to ensure adequate representation of different categories of healthcare users and employees

### **3.5 Research Instrument**

The principal instrument used for data collection was a structured questionnaire, carefully designed to obtain relevant information from respondents. The questionnaire was divided into

five sections. Section A captured the demographic characteristics of respondents, including gender, age, marital status, education, and type of healthcare facility. Section B contained five items measuring Emotional Branding, while Section C focused on five items assessing Sensory Marketing. Section D included five items designed to measure Attention Capturing techniques, and Section E comprised five items related to Memory Recall Stimulation.

All items were measured using a five-point Likert scale, ranging from Strongly Agree (SA) to Strongly Disagree (SD). The responses obtained were systematically analyzed to address the research questions and test the formulated hypotheses of the study.

### **3.6 Validity of Research Instrument**

The content validity of the questionnaire was established through expert review. The instrument was examined by the researcher's project supervisor and other lecturers in the Department of Marketing, University of Benin. Their comments and recommendations were carefully incorporated to refine the items, ensuring that the instrument adequately captured the constructs of neuromarketing strategies and consumer behaviour, thereby enhancing both face and content validity.

### **3.7 Reliability of Research Instrument (Pilot Testing Result)**

To ensure the reliability and internal consistency of the research instrument, a pilot study was conducted using twenty (20) respondents who were not part of the main study sample but shared similar characteristics with the target population. The pilot test helped to identify ambiguous or unclear items and assess the stability of the measurement scales.

The responses obtained from the pilot test were coded and analyzed using the Statistical Package for Social Sciences (SPSS) version 26. Reliability analysis was conducted using the Cronbach's Alpha coefficient, which measures the degree to which items in each construct are internally consistent.

The results of the reliability test are presented in Table 3.1 below:

<b>Constructs</b>	<b>Number of Items</b>	<b>Cronbach's Alpha (<math>\alpha</math>)</b>	<b>Decision</b>
Emotional Branding (EB)	5	0.82	Reliable
Sensory Marketing (SM)	5	0.78	Reliable
Attention Capturing (AC)	5	0.84	Reliable
Memory Recall Stimulation (MR)	5	0.86	Reliable
Consumer Behaviour (CB)	5	0.81	Reliable
<b>Overall Reliability</b>	<b>25</b>	<b>0.82</b>	<b>Reliable</b>

*Source: Researcher's Compilation, 2025*

The Cronbach's Alpha coefficients ranged from 0.78 to 0.86, which are above the acceptable threshold of 0.70 recommended by Nunnally (1978), indicating a high level of internal consistency among the items. Consequently, the questionnaire was deemed reliable for the main data collection and further statistical analysis.

### **3.8 Method of Data Collection**

Data were collected through the administration of structured questionnaires to respondents across selected public and private healthcare facilities in Benin City, Edo State. The researcher personally visited each facility to distribute the questionnaires, ensuring direct contact and explanation of the study's purpose to enhance participant cooperation. Respondents were given adequate time (approximately one week) to complete the questionnaires at their convenience, after which the researcher returned to retrieve them. Assistance was provided to respondents who required clarification on certain items to ensure accurate responses.

### 3.9 Model Specification

The functional relationship between Neuromarketing Strategies and Consumer Behaviour is specified as follows:

$$CB = f(EB, SM, AC, MR)$$

Transforming the functional relationship into a linear regression model, the equation becomes:

$$CB = \beta_0 + \beta_1 EB + \beta_2 SM + \beta_3 AC + \beta_4 MR + e$$

Where:

- $CB$ = Consumer Behaviour
- $EB$ = Emotional Branding
- $SM$ = Sensory Marketing
- $AC$ = Attention Capturing
- $MR$ = Memory Recall Stimulation
- $\beta_0$ = Constant term (intercept)
- $\beta_1 - \beta_4$ = Coefficients of the independent variables
- $e$ = Error term

This model expresses how variations in neuromarketing strategies (emotional branding, sensory marketing, attention capturing, and memory recall stimulation) influence consumer behaviour in healthcare settings.

### 3.10 Method of Data Analysis

Data obtained from the administered questionnaires were coded and analysed using the Statistical Package for Social Sciences (SPSS) version 26. Both descriptive and inferential statistics were employed. Descriptive statistics such as frequencies, and percentages were used to summarise and interpret the demographic data and respondents' opinions, while multiple regression analysis was applied to test the hypotheses and determine the influence of neuromarketing strategies on consumer behaviour among healthcare consumers in Benin City. All hypotheses were tested at the 0.05 level of significance.

## **CHAPTER FOUR**

### **DATA PRESENTATION, ANALYSIS, AND INTERPRETATION**

#### **4.1 Introduction**

This chapter presents the analysis and interpretation of data collected from one hundred (100) respondents drawn from selected public and private healthcare institutions in Benin City, Edo State. The analysis was carried out in line with the objectives and hypotheses of the study. Descriptive statistics such as frequencies, percentages, means, and standard deviations were employed to summarize the demographic characteristics of respondents and to analyze responses to the research questions. Furthermore, inferential statistics, specifically multiple

regression analysis, were used to test the stated hypotheses at a 0.05 level of significance. The analysis provides insights into the influence of neuromarketing strategies, emotional branding, sensory marketing, attention capturing, and memory recall stimulation, on consumer behaviour in healthcare providing organizations.

## 4.2 Data Presentation

### 4.2.1 Demographic Characteristics of Respondents

The demographic variables analyzed include gender, age, marital status, educational qualification, and type of healthcare facility. The results are presented in Table 4.1 below.

**Table 4.1: Demographic Characteristics of Respondents (n = 100)**

Variable	Category	Frequency	Percentage (%)
<b>Gender</b>	Male	46	46.0
	Female	54	54.0
<b>Age</b>	18 - 25 years	20	20.0
	26 - 35 years	34	34.0
	36 - 45 years	28	28.0

	46 years and above	18	18.0
<b>Marital Status</b>	Single	38	38.0
	Married	52	52.0
	Divorced	5	5.0
	Widowed	3	3.0
<b>Educational Qualification</b>	SSCE / O'Level	10	10.0
	OND / NCE	22	22.0
	HND / Bachelor's Degree	44	44.0
	Master's Degree	18	18.0
	Doctorate (Ph.D.)	6	6.0
<b>Type of Healthcare Facility</b>	Public	58	58.0
	Private	42	42.0

*Source: Field Survey, 2025*

Table 4.1 presents the demographic profile of the respondents who participated in the study. The results show that out of the 100 respondents, 46% were male, while 54% were female. This indicates a relatively balanced gender distribution, with a slightly higher representation of females, suggesting that both male and female perspectives were fairly captured in the study.

In terms of age distribution, 20% of the respondents were between 18 and 25 years, 34% were between 26 and 35 years, 28% fell within the 36 - 45 years bracket, while 18% were 46 years and above. This pattern shows that many of the respondents were within the economically active and mature age groups (26 - 45 years), implying that the responses were provided by individuals who are likely to have meaningful experiences and decision-making capacity as consumers in the healthcare sector.

Regarding marital status, 38% of the respondents were single, 52% were married, 5% were divorced, and 3% were widowed. This reveals that most of the respondents were married, indicating that they may have greater healthcare needs and exposure, thereby enriching the reliability of their responses concerning consumer behaviour.

The educational qualification distribution shows that 10% of respondents had SSCE/O’Level, 22% possessed OND/NCE, 44% held HND/Bachelor’s degrees, 18% had Master’s degrees, and 6% attained Doctorate (Ph.D.) qualifications. This implies that the respondents were generally well-educated, enhancing the credibility of their understanding of neuromarketing concepts and their influence on consumer behaviour in healthcare organizations.

The distribution by type of healthcare facility reveals that 58% of respondents were affiliated with public healthcare facilities, while 42% were from private healthcare facilities. This suggests that the study captures perspectives from both public and private sectors, providing a balanced view of neuromarketing practices and consumer experiences within the healthcare industry in Benin City.

### 4.3 Analysis of Research Questions

#### 4.3.1 Research Question One:

*To what extent does emotional branding influence consumer behaviour in healthcare providing organisations in Benin City?*

Statement	SA f(%)	A f(%)	U f(%)	D f(%)	SD f(%)	Mean (x)
Healthcare communication makes me feel emotionally connected	45 45%	40 40%	8 8%	5 5%	2 2%	4.21
I am more loyal when I feel emotionally supported	50 50%	38 38%	7 7%	3 3%	2 2%	4.31
Emotional stories influence my choice of provider	40 40%	42 42%	10 10%	6 6%	2 2%	4.12

Empathy in communication builds trust	52 52%	37 37%	6 6%	3 3%	2 2%	4.33
Emotional branding enhances treatment commitment	44 44%	40 40%	10 10%	4 4%	2 2%	4.20
<b>Average</b>	<b>46.2</b> <b>46.2%</b>	<b>39.4</b> <b>39.4%</b>	<b>8.2</b> <b>8.2%</b>	<b>4.2</b> <b>4.2%</b>	<b>2</b> <b>2%</b>	<b>4.23</b>

*Source: Field Survey, 2025*

Table 4.2 presents respondents' opinions on the influence of emotional branding on consumer behaviour in healthcare providing organisations in Benin City. The results reveal an aggregate mean score of 4.23, which indicates that respondents generally agreed that emotional branding significantly affects their perceptions and choices regarding healthcare providers.

A majority of respondents agreed that *healthcare communication makes them feel emotionally connected* (Mean = 4.21). This suggests that emotionally oriented communication fosters a sense of belonging and personal attachment to healthcare institutions. Similarly, the statement *"I am more loyal when I feel emotionally supported"* recorded the highest mean score of 4.31 implying that emotional support and understanding enhance patients' loyalty and continued patronage.

The assertion that *"emotional stories influence my choice of provider"* had a mean score of 4.12, indicating that storytelling and emotionally charged messages play a crucial role in shaping consumer preferences. Respondents also strongly agreed that *empathy in communication builds trust* (Mean = 4.33), reflecting the importance of compassionate interaction in establishing long-term relationships between patients and healthcare providers.

The statement *"emotional branding enhances treatment commitment"* had a mean score of 4.20, showing that emotional engagement not only affects patients' perceptions but also their willingness to adhere to treatment plans and revisit the healthcare facility.

These results demonstrate that emotional branding has a strong positive influence on consumer behaviour in healthcare providing organisations. It promotes trust, strengthens loyalty, and enhances patients' emotional attachment to their healthcare providers. This finding aligns with neuromarketing principles, which emphasize that emotions often serve as the foundation of consumer decision-making and brand relationships.

#### 4.3.2 Research Question Two:

*Does sensory marketing impact the perception of healthcare services among consumers in Benin City?*

**Table 4.3: Responses on Sensory Marketing**

Statement	SA f(%)	A f(%)	U f(%)	D f(%)	SD f(%)	Mean (x)
Colours and design influence perceived quality	43 43%	38 38%	9 9%	7 7%	3 3%	4.11
Pleasant sounds reduce anxiety	40 40%	35 35%	10 10%	10 10%	5 5%	3.95
Facility atmosphere affects comfort level	48 48%	36 36%	7 7%	6 6%	3 3%	4.20
Sensory experience affects service rating	42 42%	40 40%	8 8%	6 6%	4 4%	4.08
Calming sensory features encourage revisits	44 44%	38 38%	10 10%	5 5%	3 3%	4.15
<b>Average</b>	<b>43.4 43.4%</b>	<b>37.4 37.4%</b>	<b>8.8 8.8%</b>	<b>6.8 6.8%</b>	<b>3.6 3.6%</b>	<b>4.10</b>

*Source: Field Survey, 2025*

Table 4.3 presents respondents' perceptions of the influence of sensory marketing on consumer behaviour in healthcare providing organisations in Benin City. The analysis shows an aggregate mean score of 4.10 with a standard deviation of 0.93, suggesting that respondents generally agreed that sensory marketing elements such as colour, sound, atmosphere, and design significantly affect their experiences and behavioural responses toward healthcare services.

A large proportion of respondents agreed that *the colours and visual design of a healthcare facility influence perceived quality* (Mean = 4.11). This implies that the aesthetic appeal and

design of healthcare environments play an important role in shaping patients’ perceptions of professionalism and quality of care. The statement “*pleasant sounds reduce anxiety*” recorded a mean score of 3.95, indicating that background music or soothing auditory stimuli can help alleviate patient tension and promote a relaxed atmosphere.

Respondents strongly agreed that *the overall atmosphere of a facility affects comfort level* (Mean = 4.20). This finding highlights the significance of environmental cleanliness, scent, lighting, and spatial arrangement in determining patient satisfaction. Similarly, the item “*sensory experience affects service rating*” had a mean score of 4.08, confirming that patients’ sensory impressions directly impact how they evaluate healthcare service quality.

The statement “*calming sensory features encourage revisits*” yielded a mean score of 4.15, suggesting that sensory consistency, such as familiar scents, soothing colours, and ambient sounds, can enhance patient retention and loyalty.

#### 4.3.3 Research Question Three:

*To what degree does attention capturing influence consumer decision-making in healthcare organisations in Benin City?*

**Table 4.4: Responses on Attention Capturing**

Statement	SA f(%)	A f(%)	U f(%)	D f(%)	SD f(%)	Mean (x)
Engaging materials increase health awareness	36 36%	34 34%	16 16%	10 10%	4 4%	3.88
Storytelling captures my attention more than plain info	38 38%	33 33%	14 14%	9 9%	6 6%	3.84
Visual displays improve attention to messages	35 35%	36 36%	13 13%	10 10%	6 6%	3.84
Digital messages hold my attention	32 32%	38 38%	14 14%	11 11%	5 5%	3.81
Attention-grabbing campaigns	33	36	12	13	6	3.77

influence my decisions	33%	36%	12%	13%	6%	
<b>Average</b>	<b>34.8</b>	<b>35.4</b>	<b>13.8</b>	<b>10.6</b>	<b>5.4</b>	<b>3.83</b>
	<b>34.8%</b>	<b>35.4%</b>	<b>13.8%</b>	<b>10.6%</b>	<b>5.4%</b>	

*Source: Field Survey, 2025*

Table 4.4 presents respondents' views on how attention-capturing techniques influence consumer behaviour in healthcare providing organisations. The table shows an aggregate mean score of 3.83, indicating that respondents moderately agreed that attention-capturing strategies contribute to shaping consumer awareness, engagement, and healthcare decisions.

The statement “*engaging materials increase health awareness*” recorded a mean score of 3.88, suggesting that interactive and visually appealing materials, such as brochures, infographics, and campaigns, enhance patients' understanding and retention of health information. Similarly, respondents agreed that *storytelling captures their attention more than plain information* (Mean = 3.84), showing that narratives and emotional appeals are more effective in drawing attention than purely informational messages.

The item “*visual displays improve attention to messages*” obtained a mean score of 3.84), confirming that posters, digital screens, and graphic visuals play a vital role in maintaining patients' focus on important health communication. The statement “*digital messages hold my attention*” also had a mean of 3.81, implying that modern communication channels such as emails, text messages, and short videos can effectively capture and sustain audience attention when properly designed.

The statement “*attention-grabbing campaigns influence my decisions*” recorded a mean score of 3.77, which shows that while such campaigns have an influence on healthcare decisions, their effectiveness may vary depending on message relevance and delivery method.

#### **4.3.4 Research Question Four:**

*What role does memory recall stimulation play in shaping patient loyalty and retention in healthcare organisations in Benin City?*

**Table 4.5: Responses on Memory Recall Stimulation**

<b>Statement</b>	<b>SA f(%)</b>	<b>A f(%)</b>	<b>U f(%)</b>	<b>D f(%)</b>	<b>SD f(%)</b>	<b>Mean (x)</b>
I remember providers with catchy slogans	40 40%	38 38%	12 12%	6 6%	4 4%	4.02
Consistent branding aids recall	46 46%	36 36%	8 8%	6 6%	4 4%	4.14
Story-based instructions enhance memory	44 44%	38 38%	10 10%	5 5%	3 3%	4.18
Follow-up messages sustain loyalty	48 48%	34 34%	9 9%	6 6%	3 3%	4.21
Creative information sharing improves recall	42 42%	40 40%	10 10%	5 5%	3 3%	4.13
<b>Average</b>	<b>44 44%</b>	<b>37.2 37.2%</b>	<b>9.8 9.8%</b>	<b>5.6 5.6%</b>	<b>3.4 3.4%</b>	<b>4.14</b>

*Source: Field Survey, 2025*

Table 4.5 presents respondents’ opinions on how memory recall stimulation techniques affect consumer behaviour in healthcare providing organisations. The results reveal an aggregate mean score of 4.14 with a standard deviation of 0.86, indicating that respondents generally agreed that memory-enhancing strategies have a strong and positive influence on how consumers recall and engage with healthcare providers.

Respondents agreed that *they remember healthcare providers with catchy slogans* (Mean = 4.02), implying that memorable phrases and taglines play a key role in brand retention and recall. Similarly, the statement “*consistent branding aids recall*” recorded a mean score of 4.14, showing that uniformity in colours, logos, and other visual identifiers strengthens brand recognition and helps patients remember the provider over time.

The item “*story-based instructions enhance memory*” yielded a mean score of 4.18, demonstrating that information presented in narrative or illustrative formats is easier to remember and apply, particularly in health-related contexts. The statement “*follow-up messages sustain loyalty*” had the highest mean score of 4.21, emphasizing that consistent

post-service communication, reminders, and feedback mechanisms help maintain long-term patient relationships and trust.

The statement “*creative information sharing improves recall*” recorded a mean score of 4.13, indicating that innovative and engaging communication methods, such as visual storytelling or digital campaigns, enhance message retention among healthcare consumers.

#### 4.4 Test of Hypotheses

Multiple regression analysis was employed to determine the influence of neuromarketing strategies (emotional branding, sensory marketing, attention capturing, and memory recall stimulation) on consumer behaviour in healthcare organizations.

**Table 4.6: Model Summary**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error
1	0.764	0.584	0.567	0.412

**Table 4.7: ANOVA Table**

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	32.518	4	8.129	47.85	0.000
Residual	23.122	95	0.243		
Total	55.640	99			

**Table 4.8: Coefficients Table**

Variable	B	Std. Error	Beta	t	Sig.	Decision
Constant	0.921	0.214	-	4.30	0.000	-
Emotional Branding (EB)	0.318	0.077	0.324	4.13	0.000	Significant
Sensory Marketing (SM)	0.276	0.085	0.281	3.25	0.002	Significant
Attention Capturing (AC)	0.091	0.069	0.088	1.32	0.190	Not Significant

Memory Recall Stimulation (MR)	0.254	0.080	0.266	3.18	0.002	Significant
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*Source: Field Survey, 2025*

### Model Summary

Table 4.6 shows the overall summary of the regression model. The correlation coefficient ( $R = 0.764$ ) indicates a strong positive relationship between the independent variables (neuromarketing strategies) and the dependent variable (consumer behaviour). The coefficient of determination ( $R^2 = 0.584$ ) implies that approximately 58.4% of the variation in consumer behaviour can be explained by the combined effects of emotional branding, sensory marketing, attention capturing, and memory recall stimulation. The Adjusted  $R^2$  value of 0.567 further confirms that the model provides a good fit, even after adjusting for the number of predictors included. The standard error of 0.412 suggests a moderate level of variability in the model's predictions.

### ANOVA Results

As presented in Table 4.7, the Analysis of Variance (ANOVA) test was conducted to assess the overall significance of the regression model. The results show a calculated F-value of 47.85 with a p-value (Sig.) of 0.000, which is less than the 0.05 level of significance. This indicates that the regression model is statistically significant and that neuromarketing strategies, taken together, have a significant effect on consumer behaviour among healthcare consumers in Benin City. Hence, the model is considered valid for hypothesis testing.

### Regression Coefficients and Hypothesis Testing

Table 4.8 presents the estimated regression coefficients for each of the independent variables. The results show that emotional branding ( $\beta = 0.318$ ,  $t = 4.13$ ,  $p = 0.000$ ), sensory marketing ( $\beta = 0.276$ ,  $t = 3.25$ ,  $p = 0.002$ ), and memory recall stimulation ( $\beta = 0.254$ ,  $t = 3.18$ ,  $p = 0.002$ ) have positive and statistically significant effects on consumer behaviour, as their p-values are

less than 0.05. This implies that when healthcare providers employ emotionally appealing communication, maintain sensory-rich environments, and use effective memory recall strategies, consumers are more likely to exhibit favourable behavioural responses such as loyalty, satisfaction, and repeat patronage.

Attention capturing ( $\beta = 0.091$ ,  $t = 1.32$ ,  $p = 0.190$ ) did not show a significant influence on consumer behaviour at the 0.05 significance level. This suggests that while attention-grabbing campaigns may attract initial interest, they may not independently sustain long-term behavioural change or loyalty among healthcare consumers.

#### **4.5 Discussion of Findings**

The findings of this study reveal that neuromarketing strategies substantially influence consumer behaviour in healthcare organizations in Benin City. Emotional branding emerged as a significant predictor of consumer behaviour, suggesting that empathy, emotional storytelling, and supportive communication foster patient trust and loyalty. This aligns with the findings of Morin (2011) and Alsharif et al. (2021), who emphasized the importance of emotional engagement in shaping consumer perceptions.

Sensory marketing also showed a significant impact, confirming that visual and environmental stimuli such as colours, sounds, and scents improve patients' comfort and perception of care quality. This supports Onobrakpeya (2024), who reported that sensory experiences positively affect perceived service quality in healthcare environments.

Attention capturing was found to be statistically insignificant. This may indicate that while patients notice engaging materials or campaigns, such elements alone do not strongly influence healthcare choices without emotional or sensory reinforcement. This partially contrasts with the observations of Yadete and Kant (2023), who noted attention-driven messaging as vital in health communication.

Memory recall stimulation demonstrated a strong and significant influence on patient loyalty and retention, reinforcing the idea that consistent branding, reminders, and follow-ups enhance memory and strengthen long-term patient relationships. This is consistent with Plassmann et al. (2012), who highlighted memory encoding as a key mechanism through which neuromarketing affects behaviour.

The study confirms that neuromarketing strategies, particularly emotional branding, sensory marketing, and memory recall stimulation, play vital roles in shaping consumer behaviour within healthcare contexts, whereas attention capturing alone exerts limited influence.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.0 Summary of Findings**

This study examined the influence of neuromarketing strategies on consumer behaviour in healthcare providing organisations in Benin City, Edo State. In the course of the research, the following findings were revealed:

Emotional branding has a significant positive influence on consumer behaviour. Patients who feel emotionally connected to healthcare providers are more likely to trust the provider, stay loyal, and follow treatment plans.

Sensory marketing significantly impacts consumer perception of healthcare services. Environmental cues such as facility colours, soothing sounds, and pleasant atmospheres improve comfort, reduce anxiety, and encourage repeat visits.

Attention capturing techniques were found to have a positive but not statistically significant effect on consumer decision-making. While engaging materials and storytelling capture attention, they alone may not strongly determine patients' choice of healthcare providers.

Memory recall stimulation significantly affects patient loyalty and retention. Consistent branding, memorable messages, and follow-up communications enhance patients' ability to recall providers and sustain engagement over time.

Collectively, the independent variables (emotional branding, sensory marketing, attention capturing, and memory recall stimulation) explain 58.4% of the variance in consumer behaviour among healthcare users in Benin City.

## **5.1 Conclusion**

The study examined the influence of neuromarketing strategies on consumer behaviour in healthcare providing organisations in Benin City. Four core dimensions of neuromarketing were considered: emotional branding, sensory marketing, attention capturing, and memory recall stimulation. Data were collected from 100 respondents using structured questionnaires

and analysed with both descriptive and inferential statistical methods, including multiple regression.

The findings indicate that emotional branding, sensory marketing, and memory recall stimulation significantly shape consumer behaviour, while attention capturing techniques showed no significant effect. This suggests that patients' decisions in healthcare are largely driven by emotional engagement, sensory comfort, and memory-based factors rather than attention alone.

The study concludes that integrating neuromarketing strategies into healthcare marketing can enhance patient satisfaction, loyalty, and long-term engagement, thereby improving both service quality and institutional sustainability in Benin City.

## **5.2 Recommendations**

Based on the findings of the study, the following recommendations are made:

1. Healthcare providers should prioritize emotional branding by fostering empathetic communication and emotionally supportive interactions to build trust and loyalty among patients.
2. Facility managers should incorporate sensory marketing strategies, such as calming colours, soothing sounds, and pleasant facility atmospheres, to improve patient comfort, reduce anxiety, and encourage repeat visits.
3. Marketing teams should complement attention-capturing techniques with emotional and sensory strategies, as attention alone is insufficient to influence patient decisions significantly.
4. Healthcare organisations should implement consistent branding, memorable messaging, and follow-up communication to enhance memory recall, strengthen patient retention, and reinforce loyalty.

5. Training and capacity-building for healthcare staff should include neuromarketing principles to ensure that service delivery aligns with patients' emotional and cognitive needs.

### **5.3 Proposal for Further Studies**

This study focused on four dimensions of neuromarketing strategies in healthcare: emotional branding, sensory marketing, attention capturing, and memory recall stimulation. Future research could explore additional factors such as digital health engagement, cultural influences on patient behaviour, ethical considerations of neuromarketing, and comparative studies across different Nigerian cities. Expanding the scope will provide deeper insights into the full potential of neuromarketing in healthcare and its impact on consumer behaviour across diverse contexts.

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## **APPENDIX 1**

**UNIVERSITY OF BENIN, BENIN CITY, EDO STATE, NIGERIA  
FACULTY OF MANAGEMENT SCIENCES  
DEPARTMENT OF MARKETING**

## QUESTIONNAIRE

Dear Respondent,

I am a postgraduate student conducting a research study titled “*Neuromarketing and Consumer Behaviour in Healthcare Providing Organizations in Benin City.*” The purpose of this study is to examine how neuromarketing strategies such as emotional branding, sensory marketing, attention capturing, and memory recall stimulation influence consumer behaviour in healthcare organizations.

You have been selected as part of the respondents for this study. Kindly note that your responses will be used strictly for academic purposes. All information provided will be treated with the highest level of confidentiality, and your identity will not be disclosed in any part of the research report. There are no risks attached to your participation, and you are free to withdraw at any time if you do not wish to continue.

Your honest responses will be highly valuable in making this study a success. The questionnaire is simple and should not take more than 10-15 minutes to complete.

Thank you very much for your cooperation and contribution.

**Francis Favour**

### SECTION A: DEMOGRAPHIC INFORMATION

#### 1. Gender

- Male
- Female

## 2. Age

- 18–25 years ( )
- 26–35 years ( )
- 36–45 years ( )
- 46 years and above ( )

## 3. Marital Status

- Single ( )
- Married ( )
- Divorced ( )
- Widowed ( )
- Separated ( )

## 4. Educational Qualification

- SSCE / O'Level ( )
- OND / NCE ( )
- HND / Bachelor's Degree ( )
- Master's Degree ( )
- Doctorate (Ph.D.) ( )

## 6. Health care facility

- Public ( )
- Private ( )

## SECTION B: EMOTIONAL BRANDING

SN	Items	SA	A	U	D	SD
6	The way a healthcare provider communicates makes me feel emotionally connected to the organization.					
7	I am more likely to stay loyal to a healthcare provider when I feel emotionally supported.					
8	Emotional stories or messages from healthcare organizations influence my choice of provider.					
9	I trust healthcare providers more when they show empathy in their communication.					
10	Emotional branding makes me more committed to following treatment plans.					

## SECTION C: SENSORY MARKETING

SN	Items	SA	A	U	D	SD
11	The colours and visual design of a healthcare facility influence how I perceive its quality.					

12	Pleasant sounds or music in the hospital environment reduces my anxiety.					
13	The overall atmosphere (smell, cleanliness, and touch) of a facility affects my comfort level.					
14	Sensory experiences in healthcare settings affect how I rate their services.					
15	Sensory features (e.g., calming colours, soothing sounds) encourage me to revisit the same provider.					

#### SECTION D: ATTENTION CAPTURING

SN	Items	SA	A	U	D	SD
16	Interactive or engaging health materials increase my awareness of health issues.					
17	Storytelling techniques in healthcare campaigns capture my attention more than plain information.					
18	Visual displays in healthcare organisations help me pay more attention to important health messages.					
19	Digital messages from providers (texts, emails, videos) hold my attention effectively.					
20	Attention-grabbing campaigns influence my decision to use healthcare services.					

#### SECTION E: MEMORY RECALL STIMULATION

SN	ITEMS	SA	A	U	D	SD
21	I easily remember healthcare providers that use catchy slogans or memorable taglines.					
22	Consistent branding (logo, colours, symbols) helps me remember a healthcare provider.					
23	I recall treatment instructions better when they are presented with memorable examples or stories.					
24	Reminders and follow-up communications help me stay loyal to a healthcare provider.					
25	I remember providers that use creative and engaging ways to share healthcare information.					

#### APPENDIX II

##### Reliability

Table 3.1: Case Processing Summary

Cases	N	%

Valid	20	100.0
Excluded	0	0.0
<b>Total</b>	<b>20</b>	<b>100.0</b>

*Source: SPSS Output (Pilot Test, 2025)*

**Table 3.2: Reliability Statistics**

<b>Cronbach's Alpha</b>	<b>N of Items</b>
<b>0.82</b>	<b>25</b>

*Source: SPSS Output (Pilot Test, 2025)*