

1 Neuromarketing: A Modern Approach to Consumer Psychology

3 Abstract

4 Neuromarketing is a new domain for analyzing consumer psychology by employing
5 marketing data from a neuroscience perspective. To expand on what was previously known
6 about how consumers make purchasing decisions, together with traditional marketing,
7 neuromarketing has provided an alternate view of how to examine the decision-making
8 process and the emotions consumers display when making decisions as a result of the
9 marketing stimuli. In traditional marketing practices, the use of self-reported data has not
10 accurately represented the relationship between the conscious actions of a consumer as it
11 pertains to their unconscious behaviour; however, neuromarketing examines how the brain
12 responds to marketing stimuli (advertising, branding, product design), and its influence on a
13 consumer's decision-making process. The objectives of this study were to examine how
14 neuromarketing is utilized to gain an understanding of consumer psychology, as well as how
15 neuromarketing can be used to analyze the emotional and cognitive responses of a consumer
16 that ultimately affect their purchasing behaviour. To achieve these objectives, an analytical
17 and descriptive methodology was utilized through reviewing literature and utilizing case
18 studies to demonstrate the capabilities of neuromarketing tools (e.g., eye-tracking, EEG,
19 facial coding) to enhance marketing effectiveness. Findings from the study indicate that
20 neuromarketing can be utilized to develop marketing campaigns that have increased
21 effectiveness by leveraging the subconscious and emotional triggers of consumers.
22 Additionally, the study presents ethical considerations for using neuromarketing techniques
23 and emphasizes the need for transparency and protection of consumers' privacy. Overall,
24 neuromarketing provides marketers with an unparalleled opportunity to enhance their
25 marketing strategies and create a new frontier in consumer research.

26 Keywords:

27 Neuromarketing; Consumer Psychology; Consumer Behaviour; Decision Making; Emotional
28 Response; Marketing Effectiveness; Brain-Based Marketing; Purchasing Intentions.

30 1. Introduction

31 In today's highly competitive business climate, understanding consumer behaviour is one of
32 the key areas for developing a successful marketing strategy. Long established methods for
33 gaining insight into consumer preferences and purchasing behaviours, including surveys,
34 interviews, questionnaires, and focus groups, are based on self-reported data and can often do
35 not accurately convey the feelings, emotions or subconscious preferences of consumers at
36 any given time. As a result, consumers can often give responses that do not reveal their true
37 feelings about a product or brand. They may offer socially acceptable responses as opposed to
38 their actual opinion of the product in question. As such, a new interdisciplinary discipline
39 known as Neuromarketing has recently arisen, which combines neuroscience, psychology and
40 marketing research in order to better understand consumer decision-making
41 processes. Neuromarketing is a subject that studies how consumers react to advertising by
42 using various neuroscience techniques such as EEG, fMRI, eye-tracking, and other scientific

43 methods of studying the human brain through its physiological responses and neurological
44 activity. This type of marketing research provides valuable information regarding the
45 customer's thoughts and feelings while making purchasing decisions. By using a combination
46 of different neuromarketing tools, marketers are able to get an accurate analysis of how the
47 customer feels about specific advertising stimuli, which in turn helps marketers develop more
48 effective advertising campaigns that create a positive response from the customer. A great deal
49 of research has already been conducted in the field of consumer psychology to determine how
50 and why consumers make their purchases and how they determine what they need or want in
51 a product or service. Neuroscience-based neuromarketing goes beyond traditional marketing
52 research by providing scientific evidence of how a consumer reacts to an advertisement, how
53 the consumer processes that information, what their emotional response is (both positively
54 and negatively), how long it takes the consumer to decide whether or not to purchase the
55 product, and even the type of music and/or colors that the consumer prefers to listen to or see
56 when purchasing products or services. Many studies show that when consumers make
57 purchases, emotional responses are much more important than rational thoughts in a purchase
58 decision, which means that consumers base their decisions on emotions rather than reasoning
59 (Dooley, 2012). Advertising campaigns cost millions of dollars; therefore, neuromarketing
60 plays a significant role in determining if an advertisement has successfully attracted and
61 retained the consumer's attention and created brand recall. Neuromarketing aids in helping
62 marketers determine what aspects of the advertisement will attract the viewer's attention,
63 create emotion, and be retained in the viewer's memory. For instance, by using eye-tracking
64 technology, marketers can see where viewers look in an advertisement, and EEG allows them
65 to measure brain activity associated with attention and emotional connection. Once they have
66 that information, marketers modify the advertisement they create as well as the marketing
67 campaign. (Ariely & Berns, 2010). Neuromarketing also helps with brand management and
68 brand recall. When a consumer repeatedly views a brand logo, packaging, or advertisement,
69 the brain establishes connections and memories that will be associated with the brand. The
70 data obtained from neuromarketing research indicates that advertisements using emotional
71 branding and storytelling are much more effective than informative advertisements for long-
72 term brand memory. The reason for this is due to the fact that emotional based events trigger
73 parts of the brain's limbic system, which is associated with our emotional responses—while
74 at the same time, this same area of our brain is associated with memory storage (Lindstrom
75 2008). As a result of these findings; Brands are increasingly leveraging emotion (through
76 Emotional Marketing Strategies), Sensory Branding and Storytelling Techniques to build a
77 stronger connection to their Brand through Emotional Connections with their
78 consumers. Price strategy and product design is another area that neuromarketing can be
79 implemented into. Neuromarketing research has shown that there are different reactions in the
80 brain based on different price points/discounts/promotions. For example; when the consumer
81 perceives a price to be high, the pain centre of the brain will activate, whereas the reward
82 centre activates when the consumer feels they are receiving a good value. This helps
83 companies create price strategies that reduce perceived pain from pricing and increase
84 perceived value (Knutson et al 2007). Likewise, product packaging, colour combinations,
85 shape and texture all influence consumer perception as well as consumer purchase
86 behaviour—all can be measured through the use of Neuromarketing.

88 Even though neuromarketing has the potential benefits, several ethical concerns have been
89 raised about neuromarketing. Some researchers state that neuromarketing can manipulate
90 consumers by sending messages to their subconscious mind without the consumer's
91 knowledge. Other Ethical concerns relate to issues around privacy and data protection and
92 ethical use of brain data. For this reason, companies and researchers must be ethical and
93 transparent in their neuromarketing studies (Murphy, Illes, & Reiner, 2008). Ethical
94 neuromarketing efforts should be on understanding consumer needs and enhancing customer
95 experience instead of persuading consumers to purchase. In the last few years,
96 neuromarketing has become more relevant to the world of digital marketing, social media
97 marketing, and online advertising. Digital media allow businesses to monitor how consumers
98 act and focus on what stimulates their interest. Business utilize neuromarketing in the
99 development of their websites, how they design user interfaces, and how they develop digital
100 advertisements in their determination to optimize user experience and increase conversion
101 rates. Examples would be how companies use colour psychology, the way buttons, images,
102 and content are presented on the page, to maximize consumers' focus on the product or
103 service when the consumer visits their website. All in all, neuromarketing applies a very
104 scientific, recent psychology method to study consumers' behavior and their decision-making
105 process. Neuromarketing gives marketers the ability to gain deeper insight into how
106 consumers respond to the stimuli they experience. This knowledge is then leveraged by
107 marketers to develop more effective marketing plans, advertisements, developing brands and
108 new products. As technology continues to advance, neuromarketing will be relied upon more
109 for marketing research and consumer behavior studies. As a result, those who study
110 neuromarketing, as a modern approach to understanding consumer psychology will have a
111 better understanding of how to influence consumer's behaviors.

112

113 **2. Literature Review**

114 Neuromarketing is an emerging interdisciplinary that utilizes scientific research from
115 neuroscience, psychology and traditional marketing research to provide a more accurate
116 understanding of consumer behavior than traditional methods. Traditional approaches, such
117 as surveys, interviews and focus groups, generally depend on self-reported data that may not
118 capture the subconscious emotional and preference reactions of consumers. Neuromarketing
119 provides an alternative to this limitation through the use of neuroscience methods that assess
120 brain activity, emotional engagement, attention and memory in response to various marketing
121 stimuli (e.g. advertisements, brand identity, packaging, pricing) over the last 20 years to
122 provide insight into consumer decision-making, advertising effectiveness, brand recall and
123 purchase intentions. The first researchers to formally define neuromarketing, Lee, Broderick
124 & Chamberlain (2007), demystified the application of neuroscience tools for marketing
125 research, identifying neuromarketing as the application of the scientific method of
126 neurosciences to understand the behavior of humans concerning both marketplace and
127 marketing exchange behavior. Based on their research, they concluded that through a more
128 accurate understanding of consumer reactions to marketing stimuli at the subconscious level,
129 neuromarketing research provides greater value to marketers than other traditional marketing
130 research methods. In addition, Lee, Broderick & Chamberlain (2007) suggest that applying
131 neuromarketing to the development of products, advertising, branding, and price strategies
132 can improve the overall effectiveness of marketing. Knutson et al. (2007) investigated neural

133 predictors of purchasing behaviour and were among the first researchers to use functional
134 MRIs (fMRI) to look at neurological predictors of purchase decision making. They identified
135 activity in specific brain areas in response to consumer evaluations of products and pricing:
136 Activity in the nucleus accumbens was correlated with product preference and expected
137 pleasure from a product, while activity in the insula was correlated with pain associated with
138 pricing. Consequently, brain activity in both structures influenced consumer purchasing
139 decisions using both emotional and neurological determinants, rather than purely rational
140 response. Thus, this research established scientific support for the notion that emotions exert
141 significant influence over consumer decision-making processes. Lindstrom (2008) is perhaps
142 most well-known for providing numerous examples of the use of neuromarketing techniques
143 such as fMRI to conduct research in a variety of areas related to the use of brand marketing,
144 advertising, and consumer emotion. In an overview of his research findings, Lindstrom
145 (2008) concluded that emotional branding, sensory marketing, and storytelling-type
146 advertisements lead to significantly higher levels of consumer recall and memory for a brand
147 than advertisements that simply provide factual information about a product. Additionally,
148 Lindstrom's (2008) research findings indicate that the use of brand logos, colours, music, and
149 packaging all help to shape the way that consumers perceive and recall a particular brand by
150 creating emotions and activating areas of the brain associated with memory. Neuromarketing
151 involves the use of neuroscience to study the brain's responses to marketing stimuli, which
152 can provide valuable insights into consumer behaviour. However, ethical issues have been
153 raised about the use of neuromarketing research, particularly regarding consumer
154 manipulation, privacy, and the collection of consumer data. Murphy, Illes and Reiner (2008)
155 discuss how ethical considerations apply to neuromarketing research and introduce the
156 concept of neuroethics in marketing research. The authors also identified areas of concern
157 regarding consumer privacy, manipulation of consumers through neuromarketing research,
158 and problems associated with the collection of consumer data. They concluded that
159 neuromarketing should be used in an ethical manner to better understand consumer needs and
160 thereby enhance products instead of manipulating consumer decisions at an unconscious
161 level. The authors stressed that unethical and fair use of neuromarketing research is essential,
162 and that transparency about the ethical issues associated with it is equally important. Ariely
163 and Berns (2010) conducted a study that examined both the potential beneficial impacts of
164 neuromarketing and the limitations of neuromarketing and neuroimaging technology as it
165 relates to conducting marketing research. The authors concluded that neuromarketing
166 methodologies, including fMRI and EEG, can provide information that is otherwise
167 unavailable to marketers, such as consumer preferences, the effectiveness of advertising,
168 brand perception, and consumer intention to purchase. However, both authors acknowledged
169 that neuromarketing research is costly and requires specialized equipment, thus limiting the
170 broad application of neuromarketing. While there are various limitations related to
171 conducting neuromarketing research, both authors believe that neuromarketing has a
172 substantial potential to create new strategies and research methodologies in marketing and
173 consumer research. Morin (2011) stated that neuromarketing helps to obtain an understanding
174 of how consumers make purchasing decisions by studying both emotion and cognition in the
175 brain. This study revealed that most of the time, consumer decisions are made using emotion
176 and not logically, and that neuromarketing tools assist marketers in measuring levels of
177 emotional engagement and attention to marketing stimuli. The report also identified that
178 advertisements that create an emotional connection with consumers will have a greater

179 impact on the way consumers behave and remember brands. Dooley (2012) presented
 180 practical instances of how neuromarketing is being utilized as a marketing technique, for
 181 example in advertising, pricing, packing, and branding. The report also stated that consumers
 182 often make a purchasing decision without being aware of it, and ultimately justify their
 183 purchase logically. The author suggested that when marketing to consumers, marketers
 184 should focus on elements of emotional connection, visual appeal, storytelling, and sensory
 185 experience to be able to successfully affect consumer purchasing behavior. Marketers use
 186 neuromarketing to better understand consumer views of price, value, and brand image.
 187 Recently, additional research studies in neuromarketing have been conducted in the areas of
 188 digital marketing and online consumer purchasing behaviors. Due to the expanding digital
 189 field and social media marketing, neuromarketing principles are being increasingly applied to
 190 website development, mobile applications, and online advertising to better engage the user
 191 and encourage them to make a purchase. Many of the same elements, namely visual
 192 elements, emotional storytelling, color psychology, and personal advertisement, are currently
 193 being used in the digital marketing realm based on neuromarketing principles. According to
 194 the research, neuromarketing is essential for understanding client behaviour, how to measure
 195 the effectiveness of advertising, recall of brands, and the decisions a client makes when
 196 buying something. Emotion, attention, and memory are factors affecting consumer behaviour
 197 that have been found to be normal contributors by virtually all researchers in this area of
 198 study. The main advantage of neuromarketing over traditional marketing research
 199 methodologies is that it allows for more precise measurements of these same factors than
 200 traditional methods. Previous studies indicate that there are many areas in which more
 201 research needs to be done, for example, the cost of conducting research in developing
 202 countries, lack of empirical studies in developing countries, and ethical challenges relating to
 203 consumer privacy and data protection. In order to more fully understand the impact that
 204 neuromarketing as an evolving technique has on consumer psychology and behaviour,
 205 additional research needs to be conducted.

206 **Table 1: Summary of Key Studies in Neuromarketing**

Authors	Year	Objective of Study	Methodology	Key Findings
Lee, Broderick & Chamberlain	2007	To define neuromarketing and its applications	Conceptual	Established neuromarketing as a field; highlighted importance in understanding subconscious consumer behavior
Knutson et al.	2007	To examine neural predictors of purchase decisions	Experimental (fMRI)	Brainactivity influences purchase decisions; emotional responses are significant
Lindstrom	2008	To study emotional branding and sensory marketing	Experimental	Emotional ads improve brand recall and memory

Murphy, Illes & Reiner	2008	To analyze ethical issues in neuromarketing	Conceptual	Highlighted ethical concerns such as privacy and manipulation
Ariely & Berns	2010	To explore neuromarketing potential and limitations	Experimental	Neuromarketing helps understand consumer preferences but is costly
Morin	2011	To study emotional decision-making	Conceptual	Consumer decisions are emotion-driven
Dooley	2012	To apply neuromarketing in marketing strategies	Conceptual	Neuromarketing useful in advertising, pricing, and branding

207

208 2.2 Research Gap

- 209
- 210
- 211
- 212
- 213
- 214
- 215
- 216
- 217
- 218
- 219
- 220
- 221
- Most studies on neuromarketing are conceptual, and there is a lack of empirical research examining neuromarketing and consumer behavior.
 - Previous research mainly focused on advertising effectiveness and brand recall, while limited studies examined overall consumer psychology variables such as attention, emotion, memory, and perception together.
 - Most neuromarketing studies were conducted in developed countries, and limited research exists in developing countries.
 - There is a lack of studies integrating neuromarketing with Consumer Psychology in a single research framework.
 - Limited research has examined the relationship between neuromarketing and consumer decision-making behavior.
 - The mediating role of consumer psychology between neuromarketing and consumer decision-making has not been widely studied.

222 3. Objective of the study

- 223
- 224
- 225
- 226
- 227
- 228
- 229
1. To examine the concept and significance of Neuromarketing in modern marketing.
 2. To analyze the relationship between neuromarketing techniques and Consumer Psychology.
 3. To evaluate the impact of neuromarketing techniques on consumer attention and emotional response.
 4. To examine the role of consumer psychology factors (attention, emotion, memory, and perception) in consumer decision making.

230

231

232

233 4. Research Methodology

234 The present study is based on secondary data and adopts a conceptual and descriptive
235 research design to understand the role of Neuromarketing in influencing Consumer
236 Psychology and consumer decision making. Since the study is theoretical in nature, no
237 primary data collection, statistical tools, or empirical analysis have been used. The study is
238 based entirely on existing literature, research articles, books, reports, and published academic
239 sources.

240 **4.1 Research Design**

241 This study follows a descriptive and conceptual research design. Descriptive research helps in
242 explaining the concept, importance, and applications of neuromarketing in modern marketing
243 practices, while conceptual research focuses on developing a theoretical relationship between
244 neuromarketing, consumer psychology, and consumer decision making based on existing
245 literature. The study examines various neuromarketing tools such as EEG, eye tracking, facial
246 coding, and emotional response measurement and explains how these tools help marketers
247 understand consumer behavior and decision-making processes.

248 **4.2 Nature of Data**

249 The study is based on **secondary data**. Secondary data refers to data that has already been
250 collected and published by other researchers, organizations, and institutions. The data for this
251 study has been collected from the following sources:

- 252 • Research journals
- 253 • Academic books
- 254 • Conference papers
- 255 • Google Scholar articles
- 256 • Marketing and neuromarketing research reports
- 257 • Websites and online academic databases
- 258 • Case studies related to neuromarketing and consumer behavior

259 **4.3 Sources of Secondary Data**

260 The major sources used for collecting secondary data include:

- 261 • Journal of Consumer Behaviour
- 262 • Journal of Marketing Research
- 263 • Neuromarketing research articles
- 264 • Books on consumer psychology and marketing
- 265 • Research papers on advertising and consumer decision making

266 These sources helped in understanding the theoretical background, previous studies, research
267 gaps, and conceptual relationships among the variables.

268

269 **Table 2: Conceptual Variables of the Study**

Variable	Type	Description
Neuromarketing	Independent Variable	Emotional marketing, visual stimuli, sensory marketing
Consumer Psychology	Mediating Variable	Attention, perception, emotion, memory
Consumer Decision Making	Dependent Variable	Purchase intention, brand recall, buying behavior

270

271 **4.4 Conceptual Framework (Secondary Study)**

272 The study proposes that neuromarketing influences consumer psychology by affecting
 273 consumer attention, emotions, perception, and memory. These psychological factors further
 274 influence consumer decision making, purchase intention, and brand recall. Therefore,
 275 consumer psychology acts as a mediating variable between neuromarketing and consumer
 276 decision making.

277 **4.5 Scope of the Study**

278 The study focuses on:

- 279 • Concept of neuromarketing
- 280 • Tools and techniques of neuromarketing
- 281 • Role of consumer psychology in marketing
- 282 • Impact of emotions, memory, and perception on consumer behavior
- 283 • Relationship between neuromarketing and consumer decision making

284 **4.6 Limitations of the Study**

285 The study has certain limitations:

- 286 1. The study is based only on secondary data.
- 287 2. No primary survey or experimental research has been conducted.
- 288 3. The study is conceptual in nature and does not include statistical analysis.
- 289 4. The findings depend on existing literature and previous research studies.

290

291 **5. Conclusion**

292 The present study examined the concept and importance of Neuromarketing as a modern
 293 approach to understanding Consumer Psychology and consumer decision making using
 294 secondary data and existing literature. The study concludes that neuromarketing has emerged
 295 as an important interdisciplinary field that combines marketing, psychology, and
 296 neuroscience to understand consumers' subconscious behavior, emotions, attention, and
 297 memory processes during purchasing decisions.

298 Based on the review of literature, it is evident that traditional marketing methods are often
299 unable to capture the subconscious and emotional responses of consumers, whereas
300 neuromarketing tools such as EEG, eye-tracking, and facial coding help researchers
301 understand consumers' hidden preferences and emotional reactions toward advertisements,
302 brands, and products (Morin, 2011; Plassmann et al., 2015). The study highlights that
303 consumer decisions are not always rational but are largely influenced by emotions,
304 perception, memory, and attention, which are key components of consumer psychology
305 (Schiffman & Wisenblit, 2019). The literature also suggests that emotional advertising, sensory
306 branding, and visual marketing significantly influence consumer attention and brand recall.
307 Neuromarketing helps marketers design more effective advertisements by understanding how
308 consumers respond to colors, sounds, packaging, and brand messages (Lindstrom, 2008).
309 This indicates that companies can improve marketing effectiveness by focusing on emotional
310 engagement and consumer experience rather than only product features and
311 price. Furthermore, the study concludes that consumer psychology plays a mediating role
312 between neuromarketing and consumer decision making. Neuromarketing stimuli first
313 influence consumer attention and emotions, which are processed psychologically and then
314 converted into purchase intention and buying behavior. Therefore, understanding
315 psychological factors is essential for predicting consumer behavior and improving marketing
316 strategies. Overall, the study concludes that neuromarketing is a powerful modern marketing
317 approach that helps organizations understand consumer behavior more effectively, improve
318 brand recall, enhance customer experience, and influence purchase decisions. The integration
319 of neuromarketing and consumer psychology can help marketers develop more customer-
320 oriented marketing strategies and improve marketing communication effectiveness.

321 **6. Future Research Directions**

322 Although the present study provides conceptual understanding of neuromarketing and
323 consumer psychology, there are several areas where future research can be conducted. Future
324 researchers can conduct empirical studies using neuromarketing tools such as EEG, fMRI,
325 and eye-tracking to measure consumer brain responses and emotional reactions toward
326 advertisements and branding strategies (Plassmann et al., 2015). Experimental research can
327 be conducted to compare traditional marketing and neuromarketing advertising effectiveness
328 in terms of brand recall and purchase intention. Future studies can also examine the role of
329 neuromarketing in digital marketing, social media marketing, and online consumer behavior,
330 as digital platforms are becoming increasingly important in influencing consumer decisions
331 (Chaudhary, 2020). Researchers can study how neuromarketing techniques influence online
332 advertisements, website design, and social media content engagement. Another important area
333 for future research is ethical issues in neuromarketing. Since neuromarketing studies
334 consumer brain responses and subconscious behavior, there are concerns related to consumer
335 privacy, data protection, and manipulation of consumer behavior (Murphy, Illes, & Reiner,
336 2008). Future research can explore ethical frameworks and guidelines for the use of
337 neuromarketing in marketing practices. Future researchers can also examine demographic
338 factors such as age, gender, income, and education in relation to neuromarketing responses
339 and consumer psychology. Comparative studies can be conducted across different cultures
340 and countries to understand cultural differences in consumer psychological responses to
341 marketing stimuli. Moreover, future research can develop structural models to examine the
342 mediating role of consumer psychology between neuromarketing and consumer decision

343 making using statistical tools such as SEM (Structural Equation Modeling). Longitudinal
344 studies can also be conducted to examine long-term effects of neuromarketing on brand
345 loyalty and consumer relationships. Thus, future research should focus on empirical,
346 experimental, ethical, digital marketing, and cross-cultural aspects of neuromarketing to
347 further develop this emerging field and provide deeper insights into consumer behavior and
348 marketing strategy development.

349

350 **References**

- 351 Ariely, D., & Berns, G. S. (2010). Neuromarketing: The hope and hype of neuroimaging in
352 business. *Nature Reviews Neuroscience*, *11*(4), 284–292.
- 353 Dooley, R. (2012). *Brainfluence: 100 ways to persuade and convince consumers with*
354 *neuromarketing*. John Wiley & Sons.
- 355 Knutson, B., Rick, S., Wimmer, G. E., Prelec, D., & Loewenstein, G. (2007). Neural
356 predictors of purchases. *Neuron*, *53*(1), 147–156.
- 357 Lee, N., Broderick, A. J., & Chamberlain, L. (2007). What is neuromarketing? A discussion
358 and agenda for future research. *International Journal of Psychophysiology*, *63*(2), 199–204.
- 359 Lindstrom, M. (2008). *Buyology: Truth and lies about why we buy*. Doubleday.
- 360 Morin, C. (2011). Neuromarketing: The new science of consumer behavior. *Society*, *48*(2),
361 131–135.
- 362 Murphy, E. R., Illes, J., & Reiner, P. B. (2008). Neu
363 Ariely, D., & Berns, G. S. (2010). Neuromarketing: The hope and hype of neuroimaging in
364 business. *Nature Reviews Neuroscience*, *11*(4), 284–292.
- 365 Dooley, R. (2012). *Brainfluence: 100 ways to persuade and convince consumers with*
366 *neuromarketing*. John Wiley & Sons.
- 367 Knutson, B., Rick, S., Wimmer, G. E., Prelec, D., & Loewenstein, G. (2007). Neural
368 predictors of purchases. *Neuron*, *53*(1), 147–156.
- 369 Lee, N., Broderick, A. J., & Chamberlain, L. (2007). What is neuromarketing? A discussion
370 and agenda for future research. *International Journal of Psychophysiology*, *63*(2), 199–204.
- 371 Lindstrom, M. (2008). *Buyology: Truth and lies about why we buy*. Doubleday.
- 372 Morin, C. (2011). Neuromarketing: The new science of consumer behavior. *Society*, *48*(2),
373 131–135.
- 374 Murphy, E. R., Illes, J., & Reiner, P. B. (2008). Neuroethics of neuromarketing. *Journal of*
375 *Consumer Behaviour*, *7*(4–5), 293–302.
- 376 Chaudhary, M. (2020). Role of digital marketing in consumer behavior. *International Journal*
377 *of Marketing Studies*, *12*(3), 45–52.
- 378 Lindstrom, M. (2008). *Buyology: Truth and lies about why we buy*. Doubleday.

- 379 Morin, C. (2011). Neuromarketing: The new science of consumer behavior. *Society*, 48(2),
380 131–135.
- 381 Murphy, E. R., Illes, J., & Reiner, P. B. (2008). Neuroethics of neuromarketing. *Journal of*
382 *Consumer Behaviour*, 7(4–5), 293–302.
- 383 Plassmann, H., Ramsøy, T. Z., & Milosavljevic, M. (2015). Branding the brain: A critical
384 review and outlook. *Journal of Consumer Psychology*, 25(1), 9–28.
- 385 Schiffman, L. G., & Wisenblit, J. (2019). *Consumer behavior* (12th ed.). Pearson Education.
386
387
388

UNDER PEER REVIEW IN IJAR