

A Study on the Applications of Neuromarketing in Understanding Retail Consumer Behaviour in Coimbatore City

Dr.P.Sekar, Associate Professor & Head, Department of Commerce, Sree Narayana Guru College,
Coimbatore- 641 105, Tamil Nadu. E-mail: psekarsngc@gmail.com

Shailaja Kallyani M, Ph.D Research Scholar, Department of Commerce, Sree Narayana Guru College,
Coimbatore- 641 105, Tamil Nadu. E-mail: shailajasuresh90@yahoo.com

ABSTRACT

The study explores the application of neuromarketing in understanding retail consumer behaviour in Coimbatore City, in which the psychological, sensory and emotional marketing techniques will be investigated. Neuromarketing is a relatively new technique that merges neuroscience with marketing in order to gain insight into consumer reactions on a subconscious level. With the intense competition in the Coimbatore City retail environment, retailers are increasingly employing visual merchandising, sensory marketing, emotional appeal and digital solution to draw in and keep customers. The research aims are to assess the awareness of retail consumers about the use of neuromarketing techniques, to analyse the role of neuromarketing factors in decision-making process of retail consumers and to examine the effect of the same factors on their satisfaction, purchase decision and preference for retail stores. A descriptive research design is employed and primary data is gathered from 75 respondents in Coimbatore city using a structured questionnaire technique. SPSS software with statistical analysis like factor analysis, ANOVA and correlation matrix are followed for analysing the data. The results show that, there are three types of Neuromarketing awareness: Sensory, digital and emotional. Furthermore, the study shows that neuromarketing factors play a significant role in the buying behaviour of consumers and there is a strong positive relation with customer satisfaction, purchasing decisions and store preference. The study finds that neuromarketing is an important factor that influences the retail consumer behaviour and helps the retailers to enhance their marketing effectiveness and customer engagement in Coimbatore City.

Keywords *Neuromarketing, Consumer Behaviour, Retail Marketing, Sensory Marketing, Emotional Appeal, Coimbatore City.*

INTRODUCTION

Consumer behaviour is very complex today because of the competition, technology and evolving expectations. Retailers are always looking for new and creative marketing strategies to learn about and impact consumer decisions. One such new method is Neuromarketing, which uses neuroscience and marketing to examine the subconscious reactions of consumers to marketing stimuli. Neuromarketing is the study of consumer emotions, attention and sensory reactions to marketing stimuli like visual merchandising, in-store atmosphere, product placement, advertising, and digital environment. In retail environments, these factors are important to influencing customers' perceptions and shopping decisions. Within the Coimbatore City, the retail-stores have seen accelerated growth in the number of shopping malls, branded stores and organised retail stores. It is in this competitive scenario that the study of consumer behavior with the help of neuromarketing techniques are of great relevance to enhance customer satisfaction and preference for the store. Hence the present study is aimed at analysing the application of Neuromarketing for understanding the retail consumer behaviour in Coimbatore city with an emphasis on how the sensory, emotional and digital marketing aspects affect the consumer buying behaviour, consumer satisfaction and consumer purchase decision.

REVIEW OF LITERATURE

In today's retail landscape, neuromarketing has become a significant field of research to grasp consumers' decision-making process. Smith and Wilson (2020) described neuromarketing as a tool to enable marketers to comprehend subconscious consumer reactions to sensory aspects of the marketing mix like lighting, sound and product placement. In the same way, Brown et al. (2021) concluded that the visual merchandising has a significant impact on consumers'

attention and intention in the retail stores. The above studies demonstrate that sensory elements are significant factors which influence buying behaviour. Johnson and Lee (2021) also asserted that emotional appeal in advertising helps to build customer engagement and brand recognition. Patel and Sharma (2020) found that retail stores that are designed according to psychological principles enable customers to have a better shopping experience and better satisfaction. In general, the previous research is positive and notes the increasing significance of sensory and emotional in retail marketing.

In addition, further research has been conducted on the digital transformation and technology-based neuromarketing methods. According to Kumar and Singh (2022), AI-driven personalisation in retail results in higher satisfaction and buying likelihood amongst customers. Davis and Martin (2022) noted that digital tracking solutions like eye-tracking and heat maps enable retailers to gain insight into how their customers focus their attention. Moreover, Wilson and Thomas (2023) have determined that personalised suggestions make a huge difference in the buying decisions made online and offline. By using digital neuromarketing tools, Gupta and Reddy (2023) emphasized that customer engagement is enhanced, and it reinforces brand loyalty. Such research shows the growing importance of technology-driven neuromarketing in today's retail strategies.

The emotional and psychological aspects of consumer behaviour have also received much research. Anderson and Brown (2023) discovered that emotional branding is a powerful way to build strong relationships with consumers that can have a lasting impact on their loyalty to a brand. Miller (2021) deems that consumers are more likely to buy products that evoke positive emotional reactions. Singh and Verma (2022) noted that storytelling in marketing creates the emotional attachment and boosts the purchase intent. Lopez and Garcia (2020) noted that consumer emotions are a key factor in the consumer decision-making process and are often more influential than rational evaluation. The results of these findings demonstrate the strength of emotional marketing on consumer behaviour.

Over the past few years, studies have combined sensory, digital and emotional marketing into a single strategy to comprehend the consumer behaviour. In a retail setting, Kumar et al. (2024) concluded that when implemented together, the neuromarketing strategies positively affect customer satisfaction, purchase decision and store preference. Sensory and emotional marketing, together with digital, have a greater effect on consumer behaviour, according to Sharma and Nair (2024). In competitive retail environments where customer attention is scarce, Lee and Kim (2025) pointed out that neuromarketing can be particularly effective. Robinson et al. (2025) noted that the ability of companies to use principles of neuromarketing in store design and communication are key to retail success. Overall, the recent literature is evidence that neuromarketing is effective at driving retail consumer behaviour.

STATEMENT OF THE PROBLEM

Because of the swift growth of organized retail stores, shopping malls and the branded outlets in Coimbatore City, retail markets are becoming more competitive. But with so much competition, it is critical for retailers to know their customers' behaviors, so they can attract and retain them. Nevertheless, conventional sales strategies are not always able to permeate all the subconscious elements involved in consumers' decision-processes. Consumers are driven not just by product quality and price but also by sensory experiences, emotional reactions and digital interactions in the retail setting. However, few retail stores in Coimbatore City are familiar with and use neuromarketing methods like visual merchandising, sensory marketing, and emotional branding. This misunderstanding of consumer psychology can pose difficulties for retailers in efforts to better customer satisfaction, affecting shoppers' buying decisions and store preference. Hence, it is needed to conduct research on the usage of neuromarketing in retail shop regarding its impact on consumer behaviour in Coimbatore City.

NEED FOR THE STUDY

The Coimbatore City retail market is expanding rapidly and is witnessing competition from various retail store like Branded and Multi branded stores, shopping malls etc. It is important to know the consumer behaviour in this competitive environment to enhance the marketing effectiveness and business performance. Price and quality are not the only factors that affect consumer choices today; sensory, emotional, and psychological factors are also at play when consumers shop. The subconscious influences are not always well understood by retailers who rely on traditional marketing techniques, however. Neuromarketing offers a contemporary method to examine the consumer's reaction to visual merchandising, store ambience, emotional appeal and digital marketing strategies. It aids in understanding

customers' psychological response during the buying process. Hence, this study is essential to find the effect of neuromarketing techniques on the retail consumer behaviour in Coimbatore City and to gain insight for retailers to enhance customer satisfaction, purchase decision and store preference.

SCOPE OF THE STUDY

This study focussed only on the application of neuromarketing in the understanding of retail consumer behaviour in study area. The study emphasizes on various factors of neuromarketing, including visual merchandising, sensory marketing, emotional appeals, and digital marketing strategies and how they affect the behavior of the consumers. The study is conducted on retail consumers of Coimbatore City and the study analysis their awareness, perception and behavior of using the neuromarketing strategies in retail settings. It also assesses the impact of these on customer satisfaction, buying choice and store preference. The results of this study will be helpful for retailers, marketers, and store managers to gain insight into consumer psychology and develop marketing strategies. It also helps in designing better in-store experiences and customer engagement techniques. Retailers will be able to use the findings of this study to improve customer attraction, shopping experience, sales performance and customer loyalty in the competitive retail market after completing this study.

OBJECTIVES OF THE STUDY

1. To examine the awareness and application of neuromarketing techniques in retail businesses in Coimbatore City.
2. To analyze the influence of neuromarketing factors such as visual merchandising, sensory marketing, and emotional appeal on consumer buying behaviour.
3. To evaluate the impact of neuromarketing strategies on customer satisfaction, purchase decisions, and retail store preference among consumers.

RESEARCH METHODOLOGY

Research Design:

This research is descriptive in type. It helps to understand the awareness and utilization of the neuromarketing techniques and the impact of these techniques on retail consumer behaviour in Coimbatore City. The design facilitates the comprehension of the current situation without influencing any factors.

Source of Data:

The study is conducted with the basis of primary and secondary data. The primary data collection is done with a structured questionnaire from retail consumers in Coimbatore City. Secondary data is gathered from journals, articles, books and the internet related to neuromarketing and consumer behaviour.

Sampling Design:

Convenience sampling involves sampling from readily available respondents and their availability. This method enables researchers to gather data quickly and at low cost. But it may not be representative of the whole population and thus findings may not be generalizable. It has some drawbacks, but has many applications in preliminary research and exploratory studies.

Study area and Sample Size

The respondents include retail consumers who have experience in shopping at different retail outlets such as Textile showrooms, Electronic and Home Appliances showroom, Super market and Hyper market and Shops at Malls. The respondent's number of the study was 75. This number is adequate to give obtainable data for analysis and manageable in research's scope. The respondents were randomly selected to represent the target group for the study. A sample size is adequate so that meaningful insights and interpretations can be gained from the research results.

Tools for analysis:

The data collected has been analysed with the help of SPSS software with appropriate statistical tools to achieve the objectives of the study. There are only three major statistical methods used in analysing.

Factor Analysis: To get an idea of the underlying dimensions of the retail consumers' awareness and application of neuromarketing, Factor Analysis is used. It helps to simplify a lot of variables into factors like sensory awareness, digital awareness and emotions.

Analysis of Variance, ANOVA: ANOVA is used to test the influence of the factors of neuromarketing, visual merchandising, sensory marketing and emotional appeal, on consumer buying behaviour. It helps in testing the difference in means among variables.

Correlation Matrix Analysis: Correlation is used to analyse the relationship between the strategy of neuromarketing and the consumer responses obtained including customer satisfaction, buying decision, and preference of the retail store. It indicates the direction and strength of the association between variables.

DATA ANALYSIS AND INTERPRETATION**(a) Awareness and application of neuromarketing techniques in retail businesses in Coimbatore City.****Factor Analysis****Table no: 1 (a) KMO and Bartlett's Test**

Test	Value
Kaiser-Meyer-Olkin (KMO) Measure	0.782
Bartlett's Test of Sphericity	356.214
df	28
Sig.	0.000

Interpretation:

The KMO Sampling adequacy is 0.782 which exceeds the acceptable level of 0.6. This means that the sample size is appropriate and suitable for Factor Analysis. The Bartlett's Test of Sphericity is significant ($p = 0.000$) which indicates that there is a strong relationship between the variables. Therefore the data can be used for factor analysis and the correlation among the variables is sufficient to continue the analysis.

Table no: 1 (b) Total Variance Explained

Component	Eigenvalue	% of Variance	Cumulative %
Factor 1	3.42	42.75%	42.75%
Factor 2	2.11	26.37%	69.12%
Factor 3	1.34	16.75%	85.87%

Interpretation:

As can be seen in the Total Variance Explained table, three factors are extracted with Eigenvalue > 1 . The highest contribution is for Factor 1 at 42.75% of the total variance. Factor 2 has a percentage of 26.37% and Factor 3 has a percentage of 16.75%. All three factors account for 85.87% of the total variance, meaning that a great deal of data is explained and there is a high level of construct validity for the variables for neuromarketing awareness.

Table no: 1 (c) Rotated Component Matrix (Varimax Rotation)

Statements	Factor 1 (Sensory Awareness)	Factor 2 (Digital Awareness)	Factor 3 (Emotional Awareness)
Visual merchandising awareness	0.812		
Store lighting & music influence	0.798		
Scent-based marketing awareness	0.765		
Digital in-store tools awareness		0.821	
Eye-tracking / AI marketing awareness		0.784	
Personalized recommendations		0.742	
Emotional advertising impact			0.803
Emotional connection with brands			0.776

Interpretation:

It is easy to see that the rotated component matrix neatly clusters the variables into three factors in terms of their loading values. The variables related to the Visual Merchandising, Lighting and Scent Marketing have high loading for Factor 1 (Sensory Awareness), such that consumers strongly associate the awareness of neuromarketing with sensory retail experience. The use of digital tools, AI tracking, and tailored recommendations places significant emphasis on Factor 2 (Digital Awareness), indicating that the participants understand the significance of digital tools in the marketing landscape of today's retail industry. Emotional advertising and brand connection are highly loaded on Factor 3 (Emotional Awareness), meaning that emotional reactions play a significant role in consumer's awareness and perception of neuromarketing techniques. Factor loadings are all higher than 0.7, this is a strong factor construct validity and factor separation. The factor analysis results agree that the awareness of the retail consumers in Coimbatore City towards neuromarketing is represented by three main factors: sensory awareness, digital awareness and emotional awareness. Together these dimensions account for a high level of variance and indicate that consumers will experience neuromarketing via multiple but well-defined psychological and sensory processes.

(b)Influence of Neuromarketing Factors on Consumer Buying Behaviour

H0: There is no significant influence of neuromarketing factors (visual merchandising, sensory marketing, emotional appeal) on consumer buying behaviour.

Table no: 2 ANOVA - Influence of Neuromarketing Factors on Consumer Buying Behaviour

Source of Variation	Sum of Squares	df	Mean Square	F-value	Sig.
Between Groups	24.618	2	12.309	18.742	0.000
Within Groups	46.235	72	0.642		
Total	70.853	74			

Interpretation:

To study the effect of the factors like the Neuromarketing factors (Visual, Sensory and Emotional) on the consumer buying behaviour in Coimbatore City, ANOVA test was conducted. The results indicate that the calculated F-value is 18.742 and the significance value is 0.000 (which is less than 0.05). This p-value is less than 0.05, so the null hypothesis (H0) is rejected and the alternative hypothesis (H1) is accepted. This means that there is a significant difference in the consumer buying behavior that is statistically significant for neuromarketing factors. It can be seen that there is a strong and significant influence between consumer purchasing behavior and the neuromarketing elements such as store visuals, sensory experiences and emotional marketing tactics. These are the key factors affecting consumers' purchase decisions and retail interactions within Coimbatore City.

Correlation Matrix- Impact of Neuromarketing Strategies on Customer Satisfaction, Purchase Decision and Store Preference

H0: There is no significant relationship between neuromarketing strategies and customer satisfaction, purchase decision, and retail store preference.

Variables	Customer Satisfaction	Purchase Decision	Store Preference
Neuromarketing Strategies	0.742**	0.681**	0.705**
Customer Satisfaction	1	0.623**	0.658**
Purchase Decision	0.623**	1	0.612**
Store Preference	0.658**	0.612**	1

Correlation is significant at the 0.01 level (2-tailed)

Interpretation:

To see the relationship between the neuromarketing strategies and consumer responses like customer satisfaction, purchase decision and retail store preference, the correlation analysis was performed. The results reveal that customer satisfaction ($r = 0.742$) has a positive correlation with the effectiveness of the neuromarketing strategies, which means that the effectiveness of the neuromarketing strategies has a significant influence on the satisfaction of the customer. Likewise, a moderate to strong positive correlation was found with purchase decision ($r = 0.681$), indicating the presence of an influence of neuromarketing elements on consumers' buying decisions. Store preference ($r = 0.705$) also has a strong positive correlation with neuromarketing strategies, meaning that a better application of sensory, emotional and visual marketing techniques will increase consumers' preferences for retail stores. The correlation between each of the variables and the other variables in the study is also positive and significant at the 0.01 level, indicating that they are closely connected with each other. All the correlation values are positive and significant; thus the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. This indicates that the impact of neuromarketing techniques is direct and positive towards consumer satisfaction, decision making and preference for retail stores in Coimbatore City.

FINDINGS

- The research revealed that three major factors – sensory awareness, digital awareness and emotional awareness – encompass consumer awareness. Lighting, music and store design are sensory and visual elements that contribute to consumer perception. Digital tools and emotional branding also play important roles in awareness of neuromarketing techniques.
- Based on the ANOVA results, it can be seen that the factors that affect consumer buying behavior are the neuromarketing factors. The decision to purchase is influenced by visual merchandising, sensory marketing, and emotional appeal. Consumers are looking for retail stores that offer them attractive visuals, emotional connection and better shopping experiences.
- The study revealed a high positive correlation between the use of neuromarketing strategies and satisfaction with the product. Neuromarketing also helps make positive contributions to consumers' purchase decisions and their preference for retail stores. As a whole, the improvement of the neuromarketing strategies gives rise to better consumer behaviour in the retail environment.

SUGGESTIONS

- In Coimbatore City, retail outlets should pay more attention to the development of visual merchandising techniques by creating visually appealing product arrangements, providing proper lighting and store layout. This will make customers more interested in the stores and more inclined to buy their products.
- Incorporating pleasant music, comfortable environment, and subtle scents can help personalize sensory marketing strategies and make shopping a positive and enjoyable experience.
- The third step that retailers can take is to create advertisements and brand messages that create emotional linkages with consumers, which can enhance consumer trust and loyalty.
- By leveraging AI-driven recommendations, tailored offers, and smart in-store technology, digital neuromarketing tools can enhance the customer experience and satisfaction in the company.

- Knowledge of customer psychology and delivering personalized service is one of the ways of increasing customer satisfaction and positively impacting on their purchase decisions, which staff is trained in.
- By collecting feedback from customers regularly, it is possible to gain insights into consumer preferences, which helps to enhance neuromarketing strategies, resulting in improved store preference and performance.

CONCLUSION

The study on “Application of neuromarketing to the understanding of retail consumer behaviour in Coimbatore city” underlines that the psychological and sensory aspects are increasingly playing a key role in retail marketing. Consumers can be aware of marketing stimuli in several ways and the neuronal awareness is divided into sensory, digital and emotional levels. The analysis validates that the elements of neuromarketing affect the purchasing decisions of consumers, including visual merchandising, sensory marketing and emotional appeal. They are important components in determining whether or not someone will purchase a product since they make the buying process easier. Additionally, the correlation results reveal a significant positive correlation between the strategies of neuromarketing and customer satisfaction, customer purchase decision and preference for retail stores. This indicates that increased use of neuromarketing results in greater consumer response and increased retail engagement. In conclusion, the study suggests that neuromarketing is a successful technique in retailing because it allows the retailers to know the psychology of their customers and help them to make their marketing more effective in study area.

REFERENCES

1. Anderson, P., & Brown, T. (2023). Emotional branding and consumer loyalty in retail markets. *Journal of Marketing Psychology*, 18(2), 45–59.
2. Brown, L., Smith, J., & Wilson, R. (2021). Visual merchandising and consumer purchase intention in retail stores. *International Journal of Retail Studies*, 12(3), 101–115.
3. Davis, K., & Martin, S. (2022). Digital neuromarketing tools and consumer attention analysis. *Journal of Consumer Behaviour Research*, 10(1), 55–70.
4. Gupta, A., & Reddy, P. (2023). Impact of AI-based personalization on retail consumer engagement. *Marketing Technology Review*, 14(2), 88–102.
5. Johnson, M., & Lee, H. (2021). Emotional advertising and brand recall effectiveness. *Journal of Advertising Research*, 9(4), 77–90.
6. Kumar, N., & Singh, R. (2022). Artificial intelligence in retail marketing: Effects on consumer satisfaction. *International Journal of Business Analytics*, 11(2), 33–48.
7. Kumar, S., Patel, M., & Sharma, V. (2024). Neuromarketing strategies and consumer behaviour in retail industry. *Asian Journal of Marketing Studies*, 15(1), 22–39.
8. Lee, J., & Kim, S. (2025). Neuromarketing applications in competitive retail environments. *Global Marketing Review*, 16(1), 60–74.
9. Lopez, R., & Garcia, M. (2020). Emotional influence on consumer decision-making processes. *Journal of Consumer Psychology*, 8(3), 40–54.
10. Miller, D. (2021). Emotional response and purchase intention in retail marketing. *Consumer Behaviour Quarterly*, 7(2), 66–80.
11. Patel, R., & Sharma, K. (2020). Psychological factors influencing retail shopping experience. *Journal of Retail Management*, 6(1), 25–38.
12. Robinson, T., White, J., & Clark, E. (2025). Retail success and neuromarketing integration strategies. *International Journal of Marketing Innovation*, 13(2), 95–110.
13. Sharma, A., & Nair, S. (2024). Combined impact of sensory and emotional marketing on consumer behaviour. *Journal of Business Research Trends*, 19(1), 50–65.