

NEUROMARKETING AND CONSUMER BUYING BEHAVIOUR

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ABSTRACT: *The growing complexity of consumer decision-making has challenged marketers to understand not only what consumers purchase but also the subconscious factors that influence their purchasing decisions. Neuromarketing integrates neuroscience, psychology, and marketing to examine how consumers respond to marketing stimuli at both conscious and subconscious levels. This study investigates the influence of Emotional Response, Visual Attention, Brand Recall, and Sensory Stimulation on Consumer Buying Behaviour (CBB). Primary data were collected from 250 consumers using a structured questionnaire and analyzed through Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) using AMOS. The findings reveal that Emotional Response is the strongest predictor of Consumer Buying Behaviour, followed by Sensory Stimulation, Brand Recall, and Visual Attention. The model demonstrates satisfactory goodness-of-fit indices ($\chi^2/df = 2.243$, CFI = 0.958, TLI = 0.951, RMSEA = 0.052) and explains 68% of the variance in Consumer Buying Behaviour. The study contributes to neuromarketing literature by providing empirical evidence regarding the role of subconscious consumer responses in influencing purchasing decisions. The findings offer practical implications for marketers, advertisers, retailers, and brand managers in designing emotionally engaging and sensory-rich marketing strategies.*

Keywords

Neuromarketing, Consumer Buying Behaviour, Emotional Response, Visual Attention, Brand Recall, Sensory Stimulation, Structural Equation Modelling.

1. INTRODUCTION

The contemporary business environment is characterized by intense competition, technological advancement, and rapidly evolving consumer preferences. Traditional marketing approaches primarily rely on surveys, interviews, and focus groups to understand consumer behaviour. However, these methods often capture only conscious responses and fail to explain the subconscious processes that drive actual purchasing decisions. Consequently, researchers and practitioners have increasingly turned their attention to neuromarketing, an emerging discipline that combines neuroscience with marketing to understand how consumers process marketing stimuli and make purchase decisions.

Neuromarketing provides valuable insights into consumers' emotional, cognitive, and sensory responses toward advertisements, brands, products, and retail environments. Studies suggest that a significant proportion of consumer decisions occur subconsciously, influenced by emotions, memories, sensory experiences, and visual stimuli. Understanding these factors enables organizations to develop more effective marketing strategies and improve customer engagement. Therefore, this study examines the impact of Emotional Response, Visual Attention, Brand Recall, and Sensory Stimulation on Consumer Buying Behaviour.

2. REVIEW OF LITERATURE

Khondakar et al. (2024) conducted a systematic review on EEG-based neuromarketing and reported that neurological responses significantly improve the prediction of consumer purchase intentions compared to traditional marketing methods. The study highlighted the importance of emotional engagement and attention in influencing buying decisions.

Alsharif and Isa (2024) examined the application of functional magnetic resonance imaging (fMRI) in neuromarketing and found that emotional activation within the brain significantly affects consumer preferences and purchase behaviour. Their findings emphasized that consumers often make decisions based on emotional processing rather than rational evaluation.

Traymbak, Shukla, and Dutta (2023) validated neuromarketing constructs among Indian consumers and reported that emotional engagement, visual attention, and sensory stimuli significantly influence consumer decision-making. The study confirmed the relevance of neuromarketing principles in emerging economies.

Cristófol-Rodríguez et al. (2024) explored the relationship between sensory experiences and consumer behaviour and concluded that sensory stimulation positively affects purchase intention by enhancing consumer engagement and product perception.

Gupta, Kapoor, and Verma (2025) conducted a systematic review of neuromarketing studies and found that emotional response, brand recall, and sensory experiences consistently influence consumer buying behaviour across different industries.

3. RESEARCH GAP

Although neuromarketing has gained substantial attention globally, empirical studies examining the combined influence of Emotional Response, Visual Attention, Brand Recall, and Sensory Stimulation on Consumer Buying Behaviour remain limited, particularly in the Indian context. Most previous studies have focused on individual neuromarketing dimensions rather than an integrated structural model. This study addresses this gap by developing and validating a comprehensive SEM model that explains the influence of multiple neuromarketing factors on consumer buying behaviour.

4. STATEMENT OF THE PROBLEM

Organizations invest heavily in advertising and promotional activities; however, many marketing campaigns fail to achieve the desired impact due to inadequate understanding of subconscious consumer responses. Traditional marketing research methods often fail to reveal the emotional, sensory, and cognitive processes that influence purchase decisions. Therefore, there is a need to investigate how neuromarketing dimensions affect consumer buying behaviour and identify the most influential determinants of purchasing decisions.

5. RESEARCH OBJECTIVES

1. To examine the influence of Emotional Response on Consumer Buying Behaviour.
2. To analyze the impact of Visual Attention on Consumer Buying Behaviour.

3. To investigate the effect of Brand Recall on Consumer Buying Behaviour.
4. To determine the influence of Sensory Stimulation on Consumer Buying Behaviour.
5. To develop and validate a Structural Equation Model explaining Consumer Buying Behaviour.

6. HYPOTHESES

H1: Emotional Response significantly influences Consumer Buying Behaviour.

H2: Visual Attention significantly influences Consumer Buying Behaviour.

H3: Brand Recall significantly influences Consumer Buying Behaviour.

H4: Sensory Stimulation significantly influences Consumer Buying Behaviour.

7. RESEARCH METHODOLOGY

Research Design

Descriptive and analytical research design.

Population

Consumers exposed to marketing communications and advertising campaigns.

Sampling Technique

Purposive Sampling Technique.

Sample Size

250 respondents.

Data Collection Method

Structured questionnaire.

Statistical Tools

- Descriptive Statistics
- Confirmatory Factor Analysis (CFA)
- Structural Equation Modelling (SEM)
- AMOS Version 24

8. DATA ANALYSIS AND INTERPRETATION

SEM Analysis

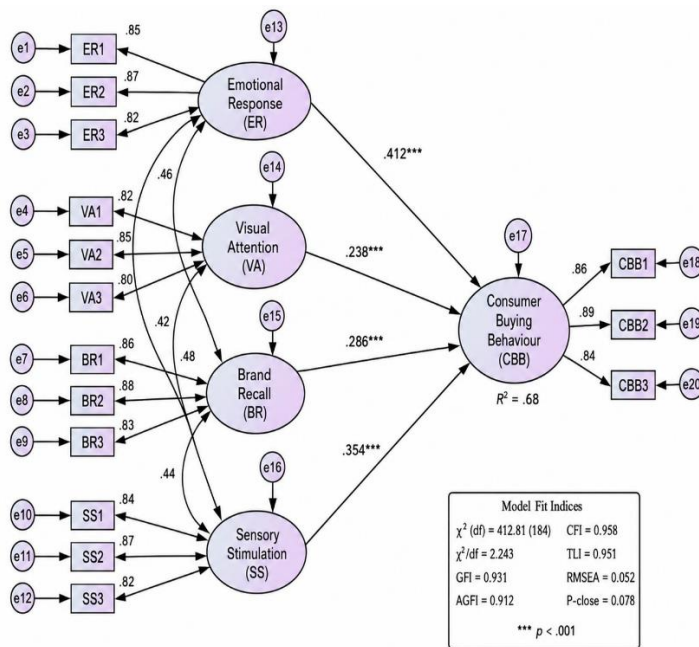


Table 1. Standardized Factor Loadings

Construct	Indicator	Loading
Emotional Response	ER1	0.85
	ER2	0.87

	ER3	0.82
Visual Attention	VA1	0.82
	VA2	0.85
	VA3	0.8
Brand Recall	BR1	0.86
	BR2	0.88
	BR3	0.83
Sensory Stimulation	SS1	0.84
	SS2	0.87
	SS3	0.82
Consumer Buying Behaviour	CBB1	0.86
	CBB2	0.89
	CBB3	0.84

Interpretation

All factor loadings exceed 0.70, confirming convergent validity and measurement reliability.

Table 2. Structural Regression Weights

Path	β
ER → CBB	0.412***
VA → CBB	0.238***
BR → CBB	0.286***

SS → CBB	0.354***
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***p < 0.001

Interpretation

All hypothesized relationships are statistically significant. Emotional Response has the strongest impact on Consumer Buying Behaviour.

Table 3. Model Fit Indices

Fit Index	Value
χ^2/df	2.243
GFI	0.931
AGFI	0.912
CFI	0.958
TLI	0.951
RMSEA	0.052
PCLOSE	0.078

Interpretation

All model fit indices satisfy recommended thresholds, indicating that the SEM model adequately fits the observed data.

Table 4. Squared Multiple Correlation

Variable	R ²
Consumer Buying Behaviour	0.68

Interpretation

The model explains 68% of the variance in Consumer Buying Behaviour.

9. FINDINGS

The study found that all four neuromarketing dimensions significantly influence Consumer Buying Behaviour. Emotional Response emerged as the most influential predictor, indicating that consumers tend to make purchase decisions based on emotional engagement and psychological connection with brands. Sensory Stimulation also demonstrated a strong positive influence, highlighting the importance of sensory-rich marketing experiences.

The findings further revealed that Brand Recall significantly influences purchasing decisions, suggesting that memorable advertisements and consistent brand communication enhance consumer preference. Visual Attention also contributes positively to Consumer Buying Behaviour by increasing consumer engagement with marketing content.

10. SUGGESTIONS

Organizations should focus on developing emotionally engaging marketing campaigns that create strong psychological connections with consumers. Emotional storytelling, customer-centric advertising, and personalized communication strategies can significantly improve marketing effectiveness.

Marketers should also invest in sensory marketing techniques such as attractive packaging, experiential retailing, ambient store environments, and interactive digital experiences. Strengthening brand recall through consistent branding and memorable advertising can further enhance consumer purchase intentions.

11. MANAGERIAL IMPLICATIONS

The study provides valuable insights for marketing managers, advertisers, retailers, and brand strategists. The findings indicate that emotional engagement should be a central component of marketing strategies. Companies can utilize neuromarketing principles to design advertisements that evoke positive emotions and strengthen customer relationships.

Retailers can improve consumer experiences through sensory marketing initiatives, while digital marketers can leverage visual content and consumer analytics to optimize customer engagement. These approaches can enhance brand loyalty, customer satisfaction, and organizational performance.

12. FUTURE SCOPE OF THE STUDY

Future research may incorporate additional neuromarketing variables such as attention retention, trust perception, reward anticipation, and customer experience. Comparative studies across industries such as FMCG, healthcare, tourism, education, and e-commerce may provide broader insights into consumer behaviour.

Researchers may also employ advanced neuroscience tools such as EEG, eye-tracking, fMRI, and biometric analysis to capture real-time consumer responses and improve the predictive accuracy of neuromarketing models.

13. CONCLUSION

Neuromarketing offers a scientific framework for understanding the subconscious mechanisms that influence consumer buying decisions. The study confirms that Emotional Response, Visual Attention, Brand Recall, and Sensory Stimulation significantly affect Consumer Buying Behaviour. Among these factors, Emotional Response emerged as the strongest determinant, highlighting the critical role of emotions in marketing effectiveness.

The Structural Equation Model demonstrated satisfactory fit and explained a substantial proportion of consumer buying behaviour. The findings reinforce the importance of integrating neuromarketing insights into marketing strategies to improve consumer engagement, enhance brand performance, and achieve sustainable competitive advantage. As consumer behaviour continues to evolve, neuromarketing will play an increasingly important role in helping organizations understand and influence purchase decisions effectively.

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