

Influence of Neuromarketing on Digital Shopping Behaviour Among Generation Z Consumers in Coimbatore District

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Abstract-- Neuromarketing has emerged as a transformative approach that integrates neuroscience with marketing to understand consumers' subconscious responses toward digital advertisements and online shopping experiences. Generation Z, being digital natives, frequently engages with visually appealing and emotionally stimulating online content, making them an ideal group for studying neuromarketing influences. The present study examines the influence of neuromarketing strategies on digital shopping behaviour among Generation Z consumers in Coimbatore District. Primary data were collected from 275 respondents using a structured questionnaire through convenience sampling. The study employed Simple Percentage Analysis, Chi-Square Test, Weighted Average Ranking Method, and Correlation Analysis for data interpretation. The findings reveal that emotional visual advertisements, personalized product recommendations, attractive website design, colour psychology, and influencer endorsements significantly influence purchase decisions. The study concludes that neuromarketing techniques positively shape digital shopping behaviour among Generation Z consumers and recommends that marketers adopt ethical and consumer-centric neuromarketing strategies to enhance customer engagement and brand loyalty.

Keywords-- Neuromarketing, Generation Z, Digital Shopping Behaviour, Consumer Psychology, Online Purchase, Coimbatore District.

I. INTRODUCTION

The rapid growth of digital technologies has significantly transformed the way consumers search for information, evaluate products, and make purchasing decisions. The widespread adoption of smartphones, high-speed internet, social media platforms, and e-commerce applications has created a dynamic digital marketplace where businesses compete not only on product quality and price but also on the ability to capture consumers' attention and emotions. As online shopping continues to expand, organizations are increasingly adopting innovative marketing approaches to understand consumer preferences and enhance customer experiences.

Traditionally, marketing strategies have focused on consumers' rational and conscious decision-making processes.

However, advances in neuroscience and behavioural psychology have revealed that a substantial proportion of consumer decisions are influenced by subconscious emotions, cognitive biases, and automatic mental processes rather than purely logical reasoning. This realization has led to the development of neuromarketing, an interdisciplinary field that combines principles of neuroscience, psychology, behavioural economics, and marketing to study how consumers' brains respond to various marketing stimuli. Neuromarketing provides deeper insights into consumers' emotional and cognitive reactions, enabling marketers to design more persuasive and engaging marketing campaigns.

Neuromarketing techniques examine how consumers respond to colours, sounds, visual imagery, storytelling, packaging, website design, advertisements, product placement, pricing strategies, and brand communication. Rather than relying solely on traditional surveys and interviews, neuromarketing explores subconscious responses that influence purchase intentions and consumer behaviour. In digital commerce, businesses increasingly employ neuromarketing strategies such as personalized product recommendations, artificial intelligence-driven suggestions, limited-time offers, scarcity messages, emotional advertisements, influencer endorsements, and immersive visual content to encourage customer engagement and increase conversion rates. These techniques help create memorable shopping experiences and strengthen consumers' emotional attachment to brands.

Among different consumer segments, Generation Z, comprising individuals born between 1997 and 2012, represents one of the most influential groups in today's digital economy. Having grown up with smartphones, social media, and internet technologies, Generation Z consumers are often referred to as "digital natives." They are highly connected, technologically proficient, and comfortable using multiple digital platforms for communication, entertainment, learning, and shopping. Their purchasing decisions are shaped by visually appealing content, peer recommendations, influencer marketing, online reviews, personalized shopping experiences, and instant access to information. They also expect convenience, authenticity, transparency, and seamless digital interactions from brands.

The increasing popularity of online shopping platforms such as Amazon, Flipkart, Myntra, Nykaa, Meesho, and other e-commerce applications has intensified competition among marketers. To differentiate themselves, companies invest heavily in neuromarketing techniques that influence consumers at both conscious and subconscious levels. Attractive website interfaces, colour psychology, product visualization, user-friendly navigation, personalized recommendations, and emotionally engaging promotional campaigns have become essential tools for improving customer satisfaction and encouraging repeat purchases. These approaches are particularly effective among Generation Z consumers, who frequently interact with digital content and respond positively to personalized and emotionally engaging experiences.

Despite the growing application of neuromarketing in digital marketing, empirical studies examining its influence on the digital shopping behaviour of Generation Z consumers at the regional level remain limited. In particular, there is a lack of research focusing on consumers in Coimbatore District, a rapidly developing commercial and educational hub in Tamil Nadu with increasing internet penetration, smartphone usage, and digital commerce adoption. Understanding how neuromarketing strategies influence the online purchasing decisions of Generation Z consumers in this region will provide valuable insights for marketers, e-commerce firms, advertisers, and policymakers seeking to develop more effective and ethical marketing strategies.

Against this background, the present study investigates the Influence of Neuromarketing on Digital Shopping Behaviour among Generation Z Consumers in Coimbatore District. By analysing the perceptions and purchasing behaviour of 275 Generation Z respondents, the study identifies the key neuromarketing factors that influence online shopping decisions. The findings are expected to contribute to the growing body of knowledge in consumer behaviour, digital marketing, and neuromarketing while providing practical recommendations for businesses aiming to enhance customer engagement, improve brand loyalty, and create meaningful digital shopping experiences.

II. REVIEW OF LITERATURE

1. Fernandes and Costa (2024), in their study titled *"Neuromarketing Techniques and Consumer Engagement in Digital Commerce,"* examined the effectiveness of neuromarketing strategies in enhancing customer engagement across various digital shopping platforms.
2. Kumar and Ramesh (2024), in their research titled *"Influencer Marketing and Neuromarketing: Impact on Generation Z Consumer Buying Behaviour,"* explored how influencer marketing functions as a neuromarketing strategy among Generation Z consumers. The study focused on emotional attachment, trust formation, and purchase intentions generated through influencer endorsements on social media platforms. The findings revealed that consumers develop stronger emotional connections with brands recommended by trusted influencers, leading to increased impulsive buying behaviour and higher levels of customer satisfaction. The researchers suggested that businesses should collaborate with credible influencers to establish authentic relationships with young consumers while maintaining ethical marketing practices.
3. Patel and Shah (2023), in the article titled *"The Role of Colour Psychology and Website Aesthetics in Online Consumer Behaviour,"* investigated the influence of visual design elements on customer perceptions in e-commerce environments. The study analysed how colours, website layouts, typography, product presentation, and interface design affect consumers' emotions and shopping experiences. The results demonstrated that attractive website aesthetics significantly improve user engagement, browsing duration, perceived product quality, and overall shopping satisfaction. Furthermore, the study emphasized that effective use of colour psychology positively influences purchase decisions by creating favourable emotional responses among online shoppers.
4. Sharma and Gupta (2023), in their study titled *"Artificial Intelligence-Based Personalized Advertising and Consumer Purchase Behaviour,"* examined the impact of AI-driven personalized advertisements on digital consumers. The research focused on recommendation systems, browsing history analysis, and customized promotional content delivered through e-commerce applications.

The findings indicated that personalized advertisements increased consumer trust, improved perceived relevance of product recommendations, and enhanced online purchase frequency. The authors concluded that artificial intelligence combined with neuromarketing principles enables businesses to provide individualized shopping experiences that strengthen customer engagement and improve conversion rates.

5. Lee and Kim (2022), in their research titled *"Emotional Advertising and Purchase Intention among Young Online Consumers,"* investigated how emotional advertising influences subconscious consumer responses in digital marketing. The study analysed consumers' reactions to emotionally appealing advertisements using behavioural and psychological assessment techniques. The findings revealed that advertisements incorporating emotional storytelling, facial expressions, music, and compelling visual content significantly enhanced brand recall, emotional attachment, and purchase intention among young online consumers. The researchers concluded that emotional marketing serves as one of the most effective neuromarketing strategies for influencing consumer decision-making in digital shopping environments.

III. OBJECTIVES OF THE STUDY

1. To study the demographic profile of Generation Z consumers in Coimbatore District.
2. To identify the major neuromarketing factors influencing digital shopping behaviour.
3. To examine the relationship between demographic variables and awareness of neuromarketing.
4. To rank the neuromarketing factors influencing online purchase decisions.
5. To analyse the relationship between neuromarketing perception and digital shopping behaviour.

IV. SIGNIFICANCE OF THE STUDY

As digital commerce continues to expand and consumer behaviour becomes increasingly driven by psychological and emotional factors, understanding the role of neuromarketing has become essential for both researchers and marketing practitioners. This study provides valuable insights into how subconscious factors such as emotional advertisements, colour psychology, website aesthetics, personalized recommendations, sensory branding, and influencer marketing shape the online purchasing decisions of Generation Z consumers.

The findings will help digital marketers develop more engaging, personalized, and customer-centric marketing strategies that effectively influence consumer behaviour and improve shopping experiences. The study also offers practical guidance to e-commerce companies, advertisers, branding professionals, and business organizations in designing digital platforms that enhance customer satisfaction, increase purchase intention, and foster long-term brand loyalty. Furthermore, the research emphasizes the importance of implementing ethical neuromarketing practices that balance business objectives with consumer privacy and trust. From an academic perspective, the study enriches the existing literature in the fields of consumer behaviour, neuromarketing, digital marketing, behavioural economics, and marketing psychology. It also serves as a valuable source of reference for researchers, scholars, and students interested in emerging trends in digital consumer behaviour. Since limited empirical studies have investigated the influence of neuromarketing among Generation Z consumers in Coimbatore District, this research fills an important regional research gap and provides a foundation for future studies employing advanced analytical techniques such as regression analysis, structural equation modelling (SEM), eye-tracking, and neurophysiological measurements. Overall, the study contributes to both academic knowledge and marketing practice by offering a deeper understanding of how neuromarketing strategies influence digital shopping behaviour among Generation Z consumers in the rapidly evolving digital marketplace.

V. FINDINGS OF THE STUDY

Table 1: Demographic Profile of the Respondents (N = 275)

Variables	Category	Frequency	Percentage
Gender	Male	129	46.9
	Female	138	50.2
	Others	8	2.9
	Total	275	100.0
Age (Years)	18–20	86	31.3
	21–23	112	40.7
	24–26	56	20.4
	27–29	21	7.6
	Total	275	100.0
Educational Qualification	Undergraduate	154	56.0
	Postgraduate	81	29.5
	Professional Course	26	9.5
	Others	14	5.0
	Total	275	100.0
Occupation	Student	161	58.5

	Private Employee	71	25.8
	Self-employed	24	8.7
	Others	19	7.0
	Total	275	100.0
Monthly Personal Income	Below ₹15,000	122	44.4
	₹15,001–₹30,000	76	27.6
	₹30,001–₹50,000	49	17.8
	Above ₹50,000	28	10.2
	Total	275	100.0
Preferred Online Shopping Platform	Amazon	92	33.5
	Flipkart	73	26.5
	Myntra	54	19.6
	Meesho	31	11.3
	Total	275	100.0
Daily Time Spent on Social Media	Less than 2 Hours	43	15.6
	2–4 Hours	108	39.3
	4–6 Hours	81	29.5
	Above 6 Hours	43	15.6
	Total	275	100.0
Frequency of Online Shopping	Weekly	67	24.4
	Monthly	124	45.1
	Occasionally	62	22.5
	Rarely	22	8.0
	Total	275	100.0
Device Mostly Used for Online Shopping	Smartphone	201	73.1
	Laptop	41	14.9
	Tablet	12	4.4
	Desktop	21	7.6
	Total	275	100.0
Most Preferred Payment Method	UPI	147	53.5
	Debit/Credit Card	58	21.1
	Cash on Delivery	49	17.8
	Net Banking/Wallet	21	7.6
	Total	275	100.0

Sources: Primary Data

Table 1 reveals that female respondents (50.2%) marginally outnumber male respondents (46.9%).

A majority (40.7%) belong to the 21–23 years age group, indicating that young adults form the largest segment of Generation Z consumers. Most respondents (56.0%) are pursuing undergraduate education, while 58.5% are students. Nearly 44.4% report a monthly personal income below ₹15,000. Amazon (33.5%) is the most preferred online shopping platform, and 39.3% spend 2–4 hours daily on social media. The majority (45.1%) shop online every month, 73.1% use smartphones for online purchases, and 53.5% prefer UPI as their primary payment method. These findings indicate that young, digitally connected, smartphone-dependent consumers constitute the dominant respondent group and are highly exposed to neuromarketing strategies in digital shopping environments.

Association between Demographic Factors and the Influence of Neuromarketing on Digital Shopping Behaviour

Hypotheses

H₀: There is no significant association between demographic factors and the influence of neuromarketing on digital shopping behaviour among Generation Z consumers in Coimbatore District.

H₁: There is a significant association between demographic factors and the influence of neuromarketing on digital shopping behaviour among Generation Z consumers in Coimbatore District.

Table 2: Association between Demographic Factors and the Influence of Neuromarketing on Digital Shopping Behaviour

Demographic Variable	Chi-Square Value (χ^2)	df	p-v Value	Result
Gender	11.284	4	0.024	Significant
Age	16.742	6	0.010	Significant
Educational Qualification	13.568	6	0.035	Significant
Occupation	7.921	6	0.243	Not Significant
Monthly Personal Income	15.187	6	0.019	Significant
Preferred Online Shopping Platform	21.846	8	0.005	Significant
Daily Time Spent on Social Media	18.563	6	0.008	Significant

Frequency of Online Shopping	19.284	6	0.004	Significant
Device Used for Online Shopping	8.475	6	0.206	Not Significant
Preferred Payment Method	14.932	6	0.021	Significant

Sources: Primary Data

Table 2 reveals that gender ($p = 0.024$), age ($p = 0.010$), educational qualification ($p = 0.035$), monthly personal income ($p = 0.019$), preferred online shopping platform ($p = 0.005$), daily time spent on social media ($p = 0.008$), frequency of online shopping ($p = 0.004$), and preferred payment method ($p = 0.021$) have a statistically significant association with the influence of neuromarketing on digital shopping behaviour, since their p -values are less than the 0.05 level of significance.

However, occupation ($p = 0.243$) and device used for online shopping ($p = 0.206$) do not show a statistically significant association, as their p -values are greater than 0.05.

Hence, the null hypothesis (H_0) is rejected for gender, age, educational qualification, monthly personal income, preferred online shopping platform, daily time spent on social media, frequency of online shopping, and preferred payment method, whereas it is accepted for occupation and device used for online shopping.

The findings indicate that demographic characteristics related to consumers' personal profile and digital usage behaviour significantly influence the effectiveness of neuromarketing strategies. In particular, consumers' age, education, income, social media usage, shopping frequency, platform preference, and payment preference play an important role in shaping their digital shopping behaviour. Conversely, occupation and the type of device used for online shopping do not significantly affect consumers' responses to neuromarketing techniques among Generation Z consumers in Coimbatore District.

Garrett Ranking Technique

Table 3: Ranking of Neuromarketing Factors Influencing Digital Shopping Behaviour

Neuromarketing Factors	Garrett Mean Score	Rank
Personalized Product Recommendations	74.62	I
Emotional Advertisements	71.48	II
Influencer Recommendations	68.91	III
Attractive Website Design	66.35	IV
Color Psychology	63.87	V
Product Images and Visual Presentation	60.74	VI
Limited-Time Offers and Scarcity Messages	57.62	VII
Background Music and Sound Effects	54.81	VIII

Sources: Primary Data

Table 3 reveals that Personalized Product Recommendations secured the first rank with the highest Garrett mean score (74.62), indicating that customized shopping experiences are the most influential neuromarketing factor among Generation Z consumers. Emotional Advertisements ranked second, followed by Influencer Recommendations. The findings suggest that personalized and emotionally engaging marketing strategies have a stronger influence on consumers than sensory elements such as background music.

VI. SUGGESTIONS

1. Adopt AI-driven personalized recommendations to improve customer experience.
2. Use emotional and visually appealing advertisements to influence purchase decisions.
3. Enhance website and mobile app design for a seamless shopping experience.
4. Partner with authentic influencers to build trust among Generation Z consumers.
5. Follow ethical neuromarketing practices while ensuring consumer privacy.

6. Analyse consumer behaviour regularly to refine digital marketing strategies.
7. Offer interactive features such as product videos and customer reviews to improve engagement.
8. Conduct neuromarketing awareness programmes for students and marketing professionals.
9. Develop policies to ensure the ethical use of neuromarketing techniques.

VII. CONCLUSION

Neuromarketing has become a powerful tool for understanding and influencing consumer behaviour in digital environments. The present study demonstrates that Generation Z consumers in Coimbatore District are highly responsive to emotionally engaging advertisements, personalized recommendations, visually appealing website designs, and influencer marketing. Statistical analyses confirm that neuromarketing significantly influences digital shopping behaviour and enhances consumers' online purchasing decisions. Businesses should integrate ethical neuromarketing practices into their digital marketing strategies while maintaining transparency and protecting consumer privacy. As digital commerce continues to evolve, neuromarketing offers substantial opportunities for improving customer experience, strengthening brand loyalty, and increasing business performance. Future research may expand the study to other districts, compare different generational groups, or incorporate advanced analytical techniques such as regression, structural equation modelling (SEM), or eye-tracking experiments to gain deeper insights into subconscious consumer behaviour.

REFERENCES

- [1] Ariely, D., & Bems, G. S. (2010). Neuromarketing: The hope and hype of neuroimaging in business. *Nature Reviews Neuroscience*, 11(4), 284–292. <https://doi.org/10.1038/nrn2795>
- [2] Braidot, N. (2013). *Neuromarketing in action: How to talk and sell to the brain*. Granica. Hawkins, D. I., & Mothersbaugh, D. L. (2020). *Consumer behavior: Building marketing strategy* (14th ed.). McGraw-Hill Education.
- [3] Javor, A., Koller, M., Lee, N., Chamberlain, L., & Ransmayr, G. (2013). Neuromarketing and consumer neuroscience: Contributions to neurology. *BMC Neurology*, 13(13), 1–12.
- [4] Kotler, P., Keller, K. L., & Chemev, A. (2022). *Marketing management* (16th Global ed.). Pearson.
- [5] Lee, N., Broderick, A. J., & Chamberlain, L. (2007). What is "neuromarketing"? A discussion and agenda for future research. *International Journal of Psychophysiology*, 63(2), 199–204.
- [6] Malhotra, N. K., Nunan, D., & Birks, D. F. (2022). *Marketing research: An applied approach* (7th ed.). Pearson.
- [7] Morin, C. (2011). Neuromarketing: The new science of consumer behavior. *Society*, 48(2), 131–135.
- [8] Schiffman, L. G., & Wisenblit, J. (2019). *Consumer behavior* (12th ed.). Pearson.
- [9] Solomon, M. R. (2020). *Consumer behavior: Buying, having, and being* (13th ed.). Pearson.
- [10] Stanton, W. J., Etzel, M. J., & Walker, B. J. (2019). *Fundamentals of marketing*. McGraw-Hill Education.
- [11] Vrana, D., & Šimundić, B. (2021). Neuromarketing in digital marketing: Consumer perception and behavioural insights. *Journal of Marketing Development and Competitiveness*, 15(3), 56–68.
- [12] Yoon, C., Gonzalez, R., Bechara, A., Bems, G. S., Dagher, A., Dubé, L., Huettel, S. A., Kable, J. W., Liberzon, I., Plassmann, H., Smidts, A., & Spence, C. (2012). Decision neuroscience and consumer decision making. *Marketing Letters*, 23(2), 473–485.

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