Neuromarketing's Impact on Buying Intentions: The Mediating Influence of Ethics

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Abstract

The empirical study examined the intricate relationship between neuro-marketing, buying intentions and ethics, in the context of online customers. This study also explored how neuro-marketing methodologies, designed to access non-conscious reactions, influence the buying intentions of online customers. The five constructs neuro-marketing, ethics in neuromarketing, interest in neuromarketing, awareness in neuromarketing, and buyer's purchase intention. A structured questionnaire was deployed to collect the data consisting of neuromarketing (5 items), buyers' purchase intentions (5 items), Interest in neuromarketing (4 items), Awareness in neuromarketing (3 items) and ethics in neuromarketing (4 items).To reach the targeted respondents who are ITemployees working in the Metro of Hyderabad, a convenience sampling technique was adopted. The other characteristic considered was the IT employee who do online shopping at least 2-3 times in a month.Three-hundred and eighty-nine (389) responses were assessed for their reliability and internal consistency measuring constructs Chronbach's alpha statistic which ranged from 0.911 to 0.948 indicating a survey instruments' reliability and consistency. The data were exposed to factor and SEM analysis. The factor analysis yielded 5 components from 21 items. The results from the SEM analysis indicate measurement model exhibited excellent fit as evidenced by model-fit indices. The structural model results indicate that 34 percent variance accounted by the four independent variables neuromarketing, awareness, ethics, and interest in neuromarketing on the dependent variable buyer purchasing intentions. All four independent variables are statistically significant and impacting the buyer purchasing intentions of online consumers. The mediator variable ethics in neuromarketing partially mediates the relationship between neuromarketing and buyers' purchasing intentions of online customers.

Keywords: Neuromarketing, Purchase Intentions, Ethics, Awareness, Interest

Introduction

Associations aspire to create and introduce products and services that can enhance their profits and market share. They seek initiatives that generate consistent demand, with a particular emphasis on engaging consumers in understanding the benefits and features of the offered products and services. The main goal is to leave a lasting impression on the customer so that when it comes time to make a decision, they can clearly see why they should choose the company's brand over competitors.

Marketing revolves around comprehending customers' psychological behavior, requirements, and stimulus, followed by delivering an experience aligned to these factors. Interestingly, more than 70% of globally launched new products, including automobiles and footwear, fail within the first six months, even when assessed through conventional marketing methods and psychological interviews or surveys. This failure often occurs because individuals either do not express or cannot articulate their true perspectives regarding their interest and purchase motivation when questioned about new products or advertising campaigns. This underscores the significance of marketers having a profound understanding of consumer behavior and psychology to create robust, customer-centric campaigns (Zeng & Marques, 2023)

A significant unresolved question in society pertains to what drives consumers to choose a specific brand or product over others, considering perceived costs and benefits. Faced with this question and the technological advancements of recent decades, a shift towards better understanding consumer behavior has gained traction against the traditional paradigms in the marketing field—neuromarketing.

Professionals in marketing have realized in more recent times the significance of value creation (weighing advantages against costs) and the critical role that satisfaction plays. Both of these commonly recognized marketing theories presuppose that the consumers seek cognitive economic rationality in their decision-making processes.

One of marketing's main goals is to be able to elicit an emotional response from consumers through advertisements or other forms of communication. However, measuring or assessing emotions is challenging. Academics studying marketing have created new theories of utility and individual rationality in response to this difficulty. Consumers usually begin their routine purchasing process with a need for a product and proceed to consider their options before making a buy or not. But this is not always an easy procedure; humans frequently use non-rational methods to make decisions instead of using logic(Herrando et al., 2022).

Researchers are consistently exploring the dimensions of attitude and consumer behavior to gain a competitive advantage. Traditional research methods, such as focus groups, have been utilized by marketing and advertising scholars to gather insights about products and brand communication. However, evolving markets necessitate new state of the art technologies to systemically understand consumers' minds (Russo et al., 2023).

To shed light on many aspects of marketing, researchers have developed a number of neurophysiological techniques in recent years to examine consumer behavior and the consequences of advertising. Predicting if their new items will be appealing to consumers, whether the suggested pricing is reasonable, and whether advertising communications are effective pose the biggest challenges for producers and managers worldwide.Traditional methods, like qualitative analysis through focus group meetings or blind trials, rely on self-reports, assuming that consumers never lie. However, in practical life, this assumption is incorrect, as consumers may provide biased responses influenced by personality traits. Neuromarketing directly tests customers' minds without needing demanding cognitive input, thereby addressing the limitations of traditional approaches (Chatterjee & Giri, 2021).

An unparalleled level of analysis of the frequency, location, and timing of neural activity can be achieved with the use of neurotechnologies and neuroimaging techniques. Neuromarketing makes use of neuroscience to comprehend how and why consumers respond differently to different product designs, packaging, and in-store displays, as well as the degree to which advertising execution and content influence them.

In 2002, a revolutionary shift occurred in the marketing world when neuromarketing took center stage. This ground breaking approach involved conducting tests using advanced tools such as fMRI, EEG (electroencephalography), and biometrics to explore the intersection of consumer behavior and neuroscience. By examining how consumers react to advertisements, brands, or campaigns, neuromarketing emerged as a powerful tool to unravel the intricacies of decision-making processes (Wang et al., 2022)

Neuromarketing isn't just a buzzword; it's a field of business marketing that taps into neuropsychology for advertising research. It delves into consumers' sensorimotor, cognitive, and emotional responses to marketing inducement. The ultimate aim is to comprehend the logic behind consumer purchasing decisions and their reactions to marketing cues, with the aim of applying these insights to enhance marketing strategies. The process of creating marketing materials, including as websites, advertisements, email campaigns, and content, with the intention of evoking particular brain processes that cause feelings or behaviors associated with buying is known as neuromarketing.. It peeks into non-conscious reactions to products, brands, or advertising spots to better understand consumer behavior, purchasing decisions, and the impact of emotions and cognitive biases on decision-making

Online Customer Behavior

Online customer behavior is the study of how people behave when shopping in the digital world. It's like understanding the virtual journey from the first click to the final purchase. As technology transforms our shopping experiences, businesses keenly observe online customer behavior to adapt their strategies and provide a seamless and satisfying online shopping experience.

Online customer behavior focuses on the unique aspects of digital shopping. It explores why you choose one website over another, what influences your online purchases, and how businesses can optimize their online presence to meet your expectations. It's not just about the products; it's about crafting an engaging digital journey.

When you browse an online store, every click and interaction tells a story. Businesses analyze the pages you visit, the time you spend on a product, and the items you add to your cart. Understanding online customer behavior helps companies personalize recommendations, enhance website design, and ultimately increase the chances of you making a purchase. For businesses, cracking the code of online customer behavior means delivering a personalized and efficient digital experience. It's about recommending products you might love, making the checkout process smooth, and adapting to your preferences in real-time. When businesses get online customer behavior right, they create loyal digital customers.

Digital tools like web analytics, heat maps, and algorithms help businesses decode online customer behavior. They track your online journey, analyze which products catch your eye, and understand the factors influencing your online decisions. These insights empower businesses to refine their online strategies for maximum appeal. While neuromarketing explores the physical and emotional aspects of consumer behavior, online customer behavior zeroes in on the digital realm. It's about understanding how users navigate websites, make choices, and complete transactions in the online environment. Combining both fields provides a holistic understanding of customer preferences and motivators.

Review of Literature

Morin (2011) reported that how neuromarketing could greatly improve the efficacy ofcommercials and advertising messages worldwide by monitoring how the brain reacts to adverts.The study highlights the innovative nature of neuromarketing in offering insights into consumer behavior that traditional methods cannot match, thus paving the way for more targeted and impactful marketing strategies. The complex interplay between neuroscience disclosures and strategies on consumer free will, particularly in marketing contexts are reported by Wilson et al., (2008). The authors suggest that marketers and consumer researchers need to stay abreast of neuroscience developments to ensure ethical marketing practices that respect consumer autonomy

Fugate (2007) challenged the traditional consumer behavior theories by suggesting that neural imaging, when combined with conventional tools, could offer more comprehensive insights into consumer behavior. This integration has the potential to revolutionize marketing practices, making them more effective and targeted. Touhami etl., (2011) examined how certain advertising activities can stimulate brain regions associated with pleasure, akin to a placebo effect. Additionally, they discuss the significance of the human reward system in neuromarketing research, offering insights into consumer behavior that can be applied beyond commercial purposes.

Nicklee et al., 2007) proposed broadening the scope of neuromarketing to encompass a wider range of marketing science beyond its traditional focus on commercial brands and consumer behavior. It defines neuromarketing as a multidisciplinary field drawing from general neuroscience and neuroeconomics, suggesting future research directions to advance the field. Agarwal & Dutta (2015) provided an overview of how neuroscience is being applied in marketing and consumer behavior research. It discusses the expected role of neuromarketing and consumer neuroscience in shaping future marketing practices, emphasizing the need for interdisciplinary collaboration in advancing the field.

Butler (2008) explored how the developing field of neuromarketing challenges the traditional perception of knowledge. It highlights the diverse ways in which stakeholders, including marketing scientists and practitioners, perceive and apply neuromarketing knowledge, impacting marketing research and practice.

Nadanyiova (2017) examined how experts and the general public see neuromarketing, outlining both the possible benefits and drawbacks. It also enumerates the advantages of employing neuromarketing research for businesses, including improved client comprehension and heightened brand loyalty.

Barbasso et al. (2018) investigated how neuromarketing affects consumer choices, giving managers direct access to the intents, feelings, and ideas of their customers. It addresses how neuromarketing affects customer decisions and offers marketing professionals theoretical and managerial takeaways.

Jordão (2017) came to the conclusion from their research that neuromarketing can improve knowledge of cognitive processes and how they affect judgment. It suggests that combining neuromarketing with traditional marketing techniques yields better results, offering new insights into consumer behavior. Madan (2010) emphasized how neuromarketing integrates psychology, neuroscience, and economics to study the brain's physiological response to advertising. It suggests that neuromarketing can scientifically evaluate an advertisement's effectiveness, providing valuable insights for marketers.

Kumar (2015) examined how neuromarketing measures attention levels resulting from advertising exposure. It examines how different attention levels influence users consciously and unconsciously, offering insights into the effectiveness of advertising strategies.Dragolea&Cotirlea (2011) discussed how studying consumers' sensory, cognitive, and emotional reactions allows researchers to understand why consumers make specific brand choices. Neuromarketing provides insights not captured by traditional research methods, shedding light on consumer decision-making processes.

Hilderbrand (2016) provided an in-depth review of advertising and branding, including the history and research methods of neuromarketing. It describes how neuromarketing might improve brand development and advertising research, with theoretical and practical implications for marketers. Simson (2010) conducted research on the importance of comprehending emotional processes in order to create successful marketing and advertising campaigns.. Neuromarketing can guide the creation of more emotionally compelling advertising and marketing strategies, enhancing brand communication.

Nyoni and Bonga (2017) highlighted the neurological aspects of market research often overlooked in traditional marketing studies. It also addresses the professional challenges and ethical considerations in neuromarketing, emphasizing the need for ethical practices in research.Stanton et al. (2017) highlighted the moral dilemmas that firms confront when it comes to neuromarketing, with a particular emphasis on consumer

hazards. It argues that current capabilities and practices do not raise meaningful ethical issues, highlighting the potential positive impact of neuromarketing on society. McDowell & Dick (2013) analysed the marketing strategies of prominent neuromarketing firms, highlighting brand differentiation techniques aimed at legitimizing neuromarketing science and attracting clients. It offers criticisms and cautions for media firms considering adopting neuromarketing, emphasizing the need for critical evaluation of its applications.

Research Gap

After a thorough and critical review of the literature, the authors could find some gaps in the area and identified the following research gap. The authors identified a scope to carry out this study with online customers in general and who are information technology employees in particular. The authors examined the relationships between Neuro-marketing and its factors awareness, interest, ethics and buyer intentions. The sampling frame considered was the employees from information technology industry, who do online shopping at least 2-3 times a month. It highlights the need for comprehensive research on the role of neuromarketing and its components on the relationship of buyer intentions

Objectives

- To evaluate the relationship between Factors of Neuro-marketing and buyer intentions
- To examine the mediating role of Ethics on the relationship between Neuro-marketing and buyer intentions

Hypotheses

H1: There was no statistically significant impact of neuromarketing on buyer purchase intentions

H2:There was no statistically significant impact of Ethics in neuromarketing onbuyer purchase intentions

H3: There was no statistically significant impact of Interestin neuromarketing on the buyer purchase intentions

H4: There was no statistically significant impact of Awareness in neuromarketing on the buyer purchase intentions

H5: Ethics in neuromarketing mediates on the relationship between neuromarketing and buyer purchase intentions.

Theoretical framework

The research model was developed following the model of Bakardjieva and Kimmel (2016). The authors studied the relationships between neuromarketing, ethics, and buyers behavioural and purchase intentions (Figures 1 & 2).

Figure 1: Neuromarketing: Researcher's theoretical framework

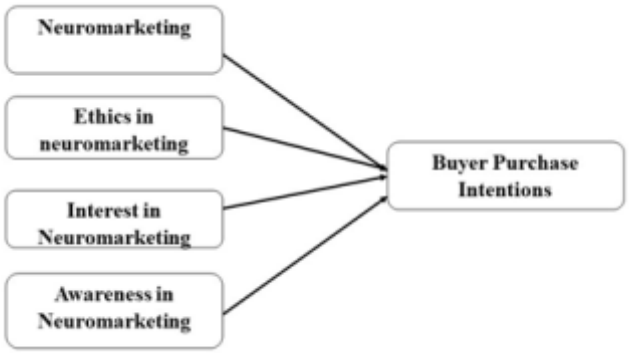
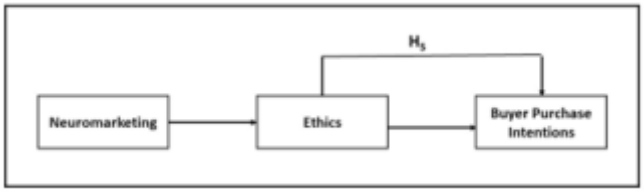


Figure 2: Neuromarketing: Authors mediation model adopted from Meteslaar et al., 2022)



Methodology

The primary data for this research was acquired through a meticulously crafted Google survey form, strategically tailored to target individuals within the age group of 16 to 60. The survey is intricately designed to delve into various aspects of participants' purchasing decisions, including inquiries about their preferred brands and the influential factors guiding their buying choices. The researchers used the scale developed by Eser et al., (2011). Furthermore, the survey aims to unravel the nuances of consumer reactions to product colors, packaging, and advertisements, seeking a comprehensive understanding of the emotional and cognitive triggers that contribute to their decision-making

process.The five reflective constructs neuromarketing (5 items), buyers' purchase intentions (5 items), Interest in neuromarketing (4 items), Awareness in neuromarketing (3 items) and ethics in neuromarketing (4 items) were used and all the items loaded well on the model and the model-fit was excellent.

The literature sources will specifically focus on elucidating how renowned brands strategically employ neuromarketing techniques to enhance the promotion and advertising of their products. The comprehensive approach, blending primary survey data with insights from scholarly literature and real-world case studies, is intended to provide a nuanced and multifaceted perspective on the impact of neuromarketing strategies on consumer behavior.The sample demographic distribution of the study variables depicted in Table 1

Table 1. Sample demography of the study variables

Variable	N	Per cent
Gender		
Men	222	57.1
Women	167	42.9
Age Group (Years)		
20-30	180	46.4
31-40	126	32.3
40-50	41	10.5
>50	42	10.8
Marital Status		
Married	250	64.26
Unmarried	139	35.74
Education		
SSC	40	10.28
Graduate	180	46.27
Post-Graduate	120	30.85
Others	49	12.60
Children		
Yes	210	54.00
No	179	46.00
Experience (Years)		
1-5	102	26.22
6-10	125	32.14
11-20	101	25.96
>20 Years	61	15.68
Source: Primary data processed		

Data analysis

Reliability of the instrument: The reliability statistic Cronbach's alpha values were Neuromarketing (0.948), Buyers Purchase Intentions (0.948), Awareness in neuromarketing (0.911), Interest in neuromarketing (0.920), and Ethics in Neuromarketing (0.945) constructs indicating the questionnaire's internal consistency and reliability.

The author's theoretical point of view was put to the test using structural equation modeling (SEM) analysis. Both the inner and outer models were evaluated. There are five reflective constructs and 21 indicators in the current study.

The researchers have generated absolute path coefficients using IBM-AMOS in a number of social science and psychology studies with both small and big sample sizes and normal and non-normal data.

(Hair et al., 2013).

Results

This section reports the outcome of SEM analysis and presents the structural model and model-fit indices and mediation analysis. The study has 5 reflective constructs and the reliability and validity are assessed to confirm the suitability for further data analysis to assess reflective measurements (Hair et al., 2011). The measurement model presented in Figure 3. The factor loadings, Average Variance Extracted (AVE), and Composite Reliability (CR) were assessed. The three constructs for Cognitive Intelligence were dropped of 0.5, and the outer model was enhanced (Hair et al., 2013). The SEM was reexamined with 21 items all the items loaded with the factor loading of > 0.7 and a measurement model was generated (Chin et al., 2008). However, for some constructs the item factor loadings are < 7, however the items were not dropped from the study as their average factor loadings are >7 (Chin et al., 2008). The factor loadings are presented in Table 2.

Factor Analysis

The factor analysis has grouped the 21 variables into 5 components based on their shared variance. The KMO Bartlett value of 0.914 reveal that the data is suitable for analysis. The spherecity value from the Bartlett's test measured <0.01 indicate that the data is fit for further analysis. All the five components explained a cumulative variance of 81.555%.

Table 2: Items and outer loadings for study variables

Neuromarketing	Factor Loading
NEURO1	0.90
NEURO2	0.92
NEURO3	0.88
NEURO4	0.87
NEURO5	0.87
Buyer Purchase Intentions	
BI1	0.83
BI2	0.87
BI3	0.86
BI4	0.79
BI5	0.76
Ethics in neuromarketing	
ETHIC1	0.91
ETHIC2	0.88
ETHIC3	0.93
ETHIC4	0.89
Interest in neuromarketing	
INT1	0.88
INT2	0.82
INT3	0.89
INT4	0.85
Awareness in neuromarketing	
AWAR1	0.89
AWAR2	0.86
AWAR3	0.88
NEURO: Neuromarketing; INT: Interest in neuromarketing; BI: Buyer purchase intentions; ETHIC: Ethics in neuromarketing; AWAR: Awareness in neuromarketing "Source: Primary data processed"	

The CFA was computed with IBM AMOS 28 version software to assess measurement model. All the factor loadings were>0.5, the recommended value. The model fit measures were assed as suggested by (Ullman, 2001; Hu and Bentler, 1998, Bentler, 1990). The five-factor model (neuromarketing, interest in neuromarketing, awareness of neuromarketing, buyer's purchase intentions, and ethics in neuromarketing) yielded an excellent fit (Table 3) for the data CMIN/df=2.202, GFI=0.930, CFI=0.977, TLI=0.972, IFI=0.977, SRMR=0.030; RMSEA=0.049, PClose=0.581.

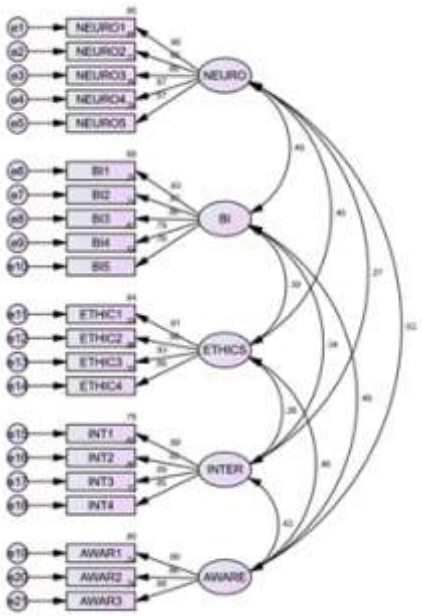
The Cronbach's alpha and Composite Reliability were measured to assess the reliability. The Cronbach's alphavalues were >0.70 for all the constructs (Nunnally and Bernstein, 1994). The composite reliability were between 0.91 to 0.95,and are greater than the threshold value of 0.70 (Hair et al. 2010) indicating the establishment of composite reliability was established (Table 3).The average variance-extracted values were above the threshold value of 0.50 (Forell & Larcker, 1981), indicating the required convergent validity (Table3).

Discriminant validity in the study was assessed using the Fornell and Larcker R criteria and the heterotrait–monotrait (HTMT) ratio. In the present study, discriminant validity was established using the Fornell and Larcker criterion, as the square root of the AVE for a construct is greater than its correlation with the other constructs. However, the study also assessed the discriminant validity using the HTMT ratio, and all the ratios were less than the required limit of 0.85 (Henseler et al., 2015). Hence, discriminant validity was established. The results of discriminant validity are presented in Table 3 Correlations among the study variables are presented in Tables4 and 5.

Table 3: Reliability and Convergent Validity

Construct	Cronbach alpha	Composite Reliability	Average Variance Extracted (AVE)
Neuromarketing	0.948	0.949	0.787
Buyer purchase intentions	0.948	0.913	0.679
Ethics in neuromarketing	0.911	0.946	0.815
Interest in neuromarketing	0.920	0.921	0.744
Awareness in neuromarketing	0.945	0.911	0.773
Source: Primary data processed			

Figure 3: Measurement model with structural relations



NEURO: Neuromarketing; INT: Interest in neuromarketing; BI: Buyer purchase intentions; ETHIC: Ethics in neuromarketing; AWAR: Awareness in neuromarketing

"Source: Primary data processed"

Table 4: Discriminant validity

	NEURO	BI	ETHICS	INTER	AWARE
NEURO	**0.887**				
BI	0.487***	**0.824**			
ETHICS	0.446***	0.388***	**0.903**		
INTER	0.270***	0.342***	0.265***	**0.863**	
AWARE	0.526***	0.492***	0.456***	0.426***	**0.879**

NEURO: Neuromarketing; INT: Interest in neuromarketing; BI: Buyer purchase intentions; ETHIC: Ethics in neuromarketing; AWAR: Awareness in neuromarketing

Source: Primary data processed

Table 5. HeterotraitMonotrait Analysis (HTMT Analysis)

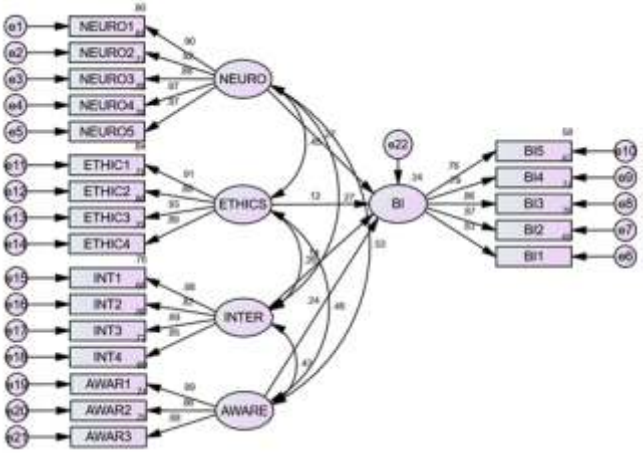
	NEURO	BI	ETHICS	INTER	AWARE
NEURO					
BI	0.497				
ETHICS	0.449	0.399			
INTER	0.273	0.348	0.259		
AWAR	0.529	0.501	0.456	0.430	
	NEURO: Neuromarketing; INT: Interest in neuromarketing; BI: Buyer purchase intentions; ETHIC: Ethics in neuromarketing; AWAR: Awareness in neuromarketing				

Structural Model Assessment

The relationships were tested using structural model The structural model was excellent as the indices are within the threshold values (Hair et al., 2010); the Tucker Lewis (1973 index (TLI); the Confirmatory fit index (CFI) (Bentler, 1990) are > 0.90 (Hair et al. 2010). The standardized root mean square residual (RMR) <0.05, and the root mean square error approximation (RMSEA) are within the threshold value (Hair et al., 2010). The fit indices for the model shown in Table 3 indicate excellent model fit. The study assessed the impact of neuromarketing, ethics in neuromarketing, interest in neuromarketing and awareness in neuromarketing on buyers' purchase intentions.

The R2 was 0.34 for buyers' purchase intention, this indicates that 34% of variance in buyers' purchase intentions accounted by neuromarketing, ethics in neuromarketing, interest in neuromarketing and awareness in neuromarketing.

Figure 5: Structural Model: Neuromarketing; Buyer purchase intentions; Ethics in neuromarketing; Interest in neuromarketing Awareness in neuromarketing



Testing of hypotheses

The study assessed the impact of neuromarketing, interest in neuromarketing, awareness in neuromarketing and ethics in neuromarketing on buyers' purchase intentions.

From the results it can be observed that impact of neuromarketing (ß=0.215, t=5.300, p<0.001), interest in neuromarketing (ß=0.107, t=2.952, p<0.05), awareness in neuromarketing ((ß=0.293, t=5.232, p<0.001), and ethics in neuromarketing (ß=0.095, t=2.600, p<0.05) on buyers' purchase intentions were statistically significant and positive (Table 7), therefore, the null hypotheses H1, H2, H3 and H4 are rejected

Table 7. Regression Weights – Testing of hypotheses

			Estimate	S.E.	C.R.	P
Purchase intentions	←	Neuromarketing	.215	.041	5.300	***
Purchase intentions	←	Ethics	.095	.037	2.600	.009
Purchase intentions	←	Interest	.107	.036	2.952	.003
Purchase intentions	←	Awareness	.293	.069	4.232	***

Mediation analysis

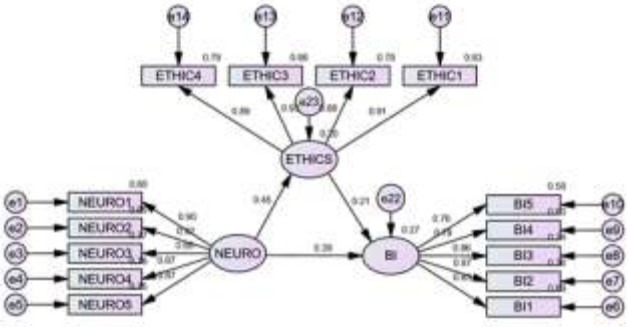
The researcher examined the mediating role of Ethics in neuromarketing on the relationship between neuromarketing and buyers' purchase intentions. The results reveal partial mediation as the direct and indirect effects have similar influence. The results further reveal that the direct and indirect mediation effects are statistically significant. Therefore, Ethics in neuromarketing is partially mediating on the relationship between neuromarketing and buyers purchase intentions.. Therefore, H5 supported

Mediation Analysis summary:
Neuromarketing →Ethic s→ Purchase intentions

			Estimate	S.E.	C.R.	P
ETHICS	←	Neuromarketing	.462	.046	10.036	***
Purchase intentions	←	Ethics	.163	.037	4.463	***
Purchase intentions	←	Neuromarketing	.310	.039	7.949	***

Indirect Path	Unstandardized Estimate	Lower	Upper	P-Value
Neuromarketing →Ethics in Neuromarketing →Buyers' Purchase Intentions	0.076	0.046	0.114	0.001

Mediation: Ethics in neuromarketing (Mediator variable); Neuromarketing (Independent variable) and Buyers' purchase intentions (dependent variable)



Discussion and Conclusion

Recognizing the challenge of measuring and quantifying emotions in marketing, this study delves into the emerging field of neuromarketing, aiming to shed light on its effectiveness and ethical implications in shaping consumer decisions. The paper contends that understanding the interplay of neuromarketing and ethics is pivotal for comprehending consumer decision-making processes in the digital realm. Traditional methods, such as focus groups, are acknowledged, but the evolving landscape demands innovative technologies to scientifically grasp the intricacies of consumer minds.

The research additionally conducted a critical analysis of extant literature and empirical findings to illustrate the substantial impact of neuromarketing on the effectiveness of commercial advertising messages, specifically in digital environments. Through a synthesis of theoretical and applied reports, the this study contextualizes neuromarketing techniques within the framework of traditional marketing research approaches, questioning the power of traditional inferential assumptions about consumer behavior.However, amid the enthusiasm for neuromarketing, the paper critically examines skepticism and ethical concerns. It addresses the potential influence of companies on consumer choices and considers practical issues, including the generalizability of findings across diverse populations with varying genetic and cultural backgrounds.

The outcome of this study supported researchers' hypotheses and intentions towards neuromarketing. Though the neuromarketing is emerging concept, however, this area is not researched thoroughly. The researchers attempted an empirical study carrying out this survey research surveying IT sector employees through a structured questionnaire following the questionnaire developed by Eser et al., 2011. The researcher used the instrument developed by Eser et al. 2011. The five reflective constructs neuromarketing (5 items), buyers' purchase intentions (5 items), Interest in neuromarketing (4 items), Awareness in neuromarketing (3 items) and ethics in neuromarketing (4 items) were used and all the items loaded well on the model and the model-fit was excellent. As the sample size is large the results can be generalized to some extent. The research is limited to Hyderabad Metro, where the researcher surveyed the IT sector employees distributing the structured questionnaire consisting 21 items. The Chronbach alpha statistic and split-half correlation indicate that survey instrument maintained its reliability and internal consistency.The author suggests a similar study with larger sample to ratify the outcome of this study.

In conclusion, the outcome from this study provides a comprehensive exploration of the association between neuromarketing, ethics, and buying intentions, offering valuable insights for marketers, researchers, and policymakers. With a focus on the mediating effects of ethics and the influence of neuromarketing approaches on online customer behavior, the study intends to further the growing conversation about ethical and successful marketing strategies in the digital era.

Scope and Limitations

Although the goal of this research is to shed light on how neuromarketing affects consumer behavior, it must be

acknowledged that there are some limitations. Firstly, the exclusive use of a Google survey form to collect primary data may introduce selection bias, as the sample is limited to individuals who have online accessibility and are willing to participate. This could potentially overlook the perspectives of individuals outside this demographic. Furthermore, the age range of 16 to 60, while providing a broad spectrum, may fully capture the nuances of consumer behavior across diverse age groups. The preferences and responses of individuals outside this range might not be adequately represented in the findings.

The reliance on self-reported data through survey responses poses another limitation, as participants may provide socially desirable answers or their perceptions may not align with their actual behaviors. Additionally, the scope of the survey questions, while designed to explore various facets of purchasing decisions, favourite brands, and reactions to marketing stimuli, may not capture the full complexity of consumer decision-making processes. In terms of secondary data, the literature review and case studies may have inherent biases, as the selection of sources is subjective. The literature might not comprehensively cover all aspects of neuromarketing, potentially limiting the depth of understanding.

Ethical considerations are paramount, especially when exploring the influence of neuromarketing on consumers. The potential impact of the study on participants' privacy and the ethical implications of delving into subconscious reactions to marketing stimuli should be carefully considered.Finally, the dynamic nature of the marketing landscape implies that the findings may have a time-sensitive quality, and the study's conclusions may not be universally applicable across different cultural and geographical contexts. Despite these limitations, this research strives to contribute valuable insights into the multifaceted relationship between neuromarketing strategies and consumer behavior.

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