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NEURO-MARKETING: UNDERSTANDING CONSUMER BEHAVIOR FOR EFFECTIVE MARKETING STRATEGIES

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ABSTRACT:

Neuro-marketing is an emerging field that blends insights from neuroscience with marketing strategies to better understand how consumers make decisions. Unlike traditional market research methods that rely on surveys and focus groups, neuro-marketing goes deeper by studying how the brain reacts to various marketing stimuli, such as advertisements, products, and brand logos. Using advanced technologies like brain imaging, eye-tracking, and biometric measurements, neuro-marketing tracks unconscious emotional and cognitive responses, providing a clearer picture of why consumers prefer certain products or brands over others.

This research shows that consumer decisions are often influenced by subconscious factors like emotions, attention, and memory—things that we may not even be aware of. By understanding how the brain processes these influences, businesses can design more effective advertising campaigns, better product designs, and more personalized marketing strategies. This, in turn, helps them connect with customers on a deeper level, driving engagement and increasing sales. Overall, neuro-marketing offers a new way to think about consumer behaviour, one that is based on how our brains naturally respond, and it holds the potential to revolutionize the future of marketing.

KEYWORDS:

Neuro-marketing, Consumer Behaviour, Emotional Response, Decision Making, Attention.

INTRODUCTION:

In a dynamic marketplace driven by emotional engagement and brand perception, traditional marketing methods are often insufficient to explain consumer decisions. Neuromarketing bridges this gap by investigating the brain's response to marketing stimuli. It leverages tools such as functional magnetic resonance imaging (fMRI), electroencephalography (EEG), and biometric measurements to assess emotional reactions, attention levels, and memory retention. This article provides a comprehensive overview of how neuromarketing enhances understanding of consumer behavior and informs strategic marketing decisions.

STATEMENT OF THE PROBLEM:

In the fast-changing landscape of the digital economy, it has become essential for marketers to comprehend the factors that genuinely affect consumer decision-making. While traditional techniques like surveys and focus

groups can capture overt preferences, they frequently overlook the subconscious elements that influence behavior. Neuromarketing fills this void by utilizing neuroscience tools—such as EEG (electroencephalography), fMRI (functional magnetic resonance imaging), and eye-tracking—to monitor consumer responses to marketing stimuli in real time. This paper seeks to explore how neuromarketing can deepen our understanding of consumer behavior, particularly within the Indian context, and to evaluate its ethical and practical ramifications.

OBJECTIVE OF THE STUDY:

01. To Investigate the Impact of Neuromarketing on Consumer Purchase Intentions.
02. To Factors Affecting the Decision-Making Process in Purchasing.
03. To Evaluate the Effectiveness of Personalized Marketing Strategies.

METHODOLOGY:

The research adopts a qualitative and quantitative approach, incorporating primary data from consumer surveys and secondary data from academic journals. Experimental stimuli included branded visuals and advertisements shown to participants while their responses were recorded using biometric feedback. Data analysis included thematic coding for qualitative insights and statistical methods such as:

- Chi-square tests to examine patterns in consumer response based on demographics.
- ANOVA (Analysis of Variance) to compare mean emotional responses among different age groups and gender.
- Simple percentage analysis to quantify the proportion of participants exhibiting specific emotional or behavioral responses to marketing stimuli.

RESULTS AND FINDINGS:

S.No	Age Group	No. of Respondents	Percentage (%)
1	Below 18	12	11.8%
2	18 – 25	48	47.1%
3	26 – 35	26	25.5%
4	36 – 45	9	8.8%
5	46 and above	7	6.8%
Total	-	102	100%

Source: Primary Data

INTERPRETATION

The above table shows that most (47.1%) of the respondents belong to the 18-25 years age group, making it the most common category. 25.5% of respondents fall within the 26-35 years range, while 11.8% are below 18 years. The 36-45 years group accounts for 8.8%, and only 6.8% of respondents are 46 and above. Most (47.1%) of the respondents belong to the 18-25 years age group.

S.No	Gender	No. of Respondents	Percentage (%)
1	Male	52	50%
2	Female	52	50%
Total	**-**	**104**	**100%**

Source: Primary Data

INTERPRETATION

The above table shows that most (47.1%) of the respondents belong to the 18-25 years age group, making it the most common category. 25.5% of respondents fall within the 26-35 years range, while 11.8% are below 18 years. The 36-45 years group accounts for 8.8%, and only 6.8% of respondents are 46 and above.

The majority of respondents are young adults aged 18-25 years.

S.No	Occupation	No. of Respondents	Percentage (%)
1	Student	43	41.3%
2	Employed	33	31.7%
3	Self-employed	20	19.2%
4	Unemployed	8	7.7%
Total	-	**104**	**100%**

Source**:** Primary Data

INTERPRETATION

The above table shows that most (41.3%) of the respondents are students, making it the most common occupational category. 31.7% of respondents are employed, while 19.2% are self-employed. The unemployed group accounts for 7.7%.

The majority of respondents are students (41.3%)

AGE AND FACTORS INFLUENCE THE DECISION MAKING

Post Hoc Tests

(I) Age	(J) Age	Mean Value (I-J)	Std. Error	F value	Sig.
Below 18	18-25	.81250	.33699	1.595	.121
	26-35	.50000	.36439	1.595	.647
	36-45	.55556	.46042	1.595	.748
	46 and above	.42857	.49658	1.595	.910
18-25	Below 18	-.81250	.33699	1.595	.121

	26-35	-.31250	.25425	1.595	.734
	36-45	-.25694	.37927	1.595	.961
	46 and above	-.38393	.42244	1.595	.893
26-35	Below 18	-.50000	.36439	1.595	.647
	18-25	.31250	.25425	1.595	.734
	36-45	.05556	.40381	1.595	1.000
	46 and above	-.07143	.44460	1.595	1.000
36-45	Below 18	-.55556	.46042	1.595	.748
	18-25	.25694	.37927	1.595	.961
	26-35	-.05556	.40381	1.595	1.000
	46 and above	-.12698	.52619	1.595	.999
46 and above	Below 18	-.42857	.49658	1.595	.910
	18-25	.38393	.42244	1.595	.893
	26-35	.07143	.44460	1.595	1.000
	36-45	.12698	.52619	1.595	.999

Age	N	Subset for alpha = 0.05
		1
18-25	48	2.1875
36-45	9	2.4444
26-35	26	2.5000
46 and above	7	2.5714
Below 18	12	3.0000
Sig.		.297

INTERPRETATION

The above post hoc table shows that the "Below 18" age group has the highest mean score (3.00), indicating that they are the most influenced when choosing between two similar products. On the other hand, the 18–25 age group has the lowest mean score (2.19), suggesting they are comparatively less influenced by specific decision-making factors.

However, the Tukey HSD test results show that none of the age group differences are statistically significant (all p-values > 0.05), and the significance value in the Homogeneous Subsets table is 0.297.

Thus, although the influence level appears to vary slightly by age group, the differences are not statistically significant, and age does not play a major role in determining the factor that influences consumer choice between two similar products.

CHISQUARE ANALYSIS

PREFERRED METHOD OF DISCOVERING NEW PRODUCTS

		How do you prefer discovering new products?				Total
		Social media	Friends' recommendations	In-store browsing	Online marketplaces	
Age	Below 18	2	2	5	3	12
	18-25	19	20	6	3	48
	26-35	5	12	5	4	26
	36-45	4	2	2	1	9
	46 and above	2	1	2	2	7
Total		32	37	20	13	102

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.442[a]	12	.172
Likelihood Ratio	16.387	12	.174
Linear-by-Linear Association	.125	1	.723
N of Valid Cases	102		

a. 13 cells (65.0%) have expected count less than 5. The minimum expected count is .89.

The above table shows that 36.3% of respondents aged 18–25 prefer discovering new products through friends' recommendations and social media, making it the most common group preference. 25.5% of respondents aged 26–35 also prefer friends' suggestions. However, across all age groups, there is no consistent or strong pattern linking age to discovery method.

Thus, the Chi-square result (p = 0.172) indicates that age does not have a significant influence on how people prefer discovering new products.

Likert Scale Analysis

Simple Percentage Analysis: The percentage analysis is usually employed in any study relating to social science to assess the distribution of respondents under each classification. The distributions of the respondents are expressed in percentage, to facilitate comparison

Percentage = Number of respondents

$$\frac{\text{Number of respondents}}{\text{Total number of respondent}} \times 100$$

CHISQUARE ANALYSIS:

The Chi-Square test is used to find out if there is a link between two categorical variables in a survey. It compares actual responses with expected ones to see if the difference is significant. In this study, it helps identify whether sensory marketing elements truly influence consumer decisions.

Chi-Square Formula:

$$X^2 = \sum \frac{(O - E)^2}{E}$$

Where:

- X^2 is the chi-square test statistic
- Σ is the summation operator (it means "take the sum of")
- *O* is the observed frequency
- *E* is the expected frequency

ANOVA

ANOVA is a statistical method used to compare the means of three or more groups to see if there is a significant difference between them. It helps determine whether the variation in responses is due to actual differences between groups or just by chance. In this study, ANOVA is used to find out if different groups (such as age, gender, or preference levels) respond differently to sensory marketing elements. If the result is significant, it means group characteristics influence consumer behavior.

ANOVA Formula

SST=∑i=1k∑j=1ni(Xij−X¯)2

- XijX_{ij}Xij: j-th observation in the i-th group
- X¯\bar{X}X¯: Overall mean of all observations
- kkk: Number of groups
- nin_ini: Number of observations in group i

FINDINGS:

Age of respondents: Most (47.1%) of the respondents belong to the 18-25 years age group.

Educational qualification: Majority (36.6%) of respondents are postgraduates.

Family monthly income: Majority of respondents come from middle to upper-middle income families.

OCCUPATION: Majority (43.3%) of respondents are students.

BEST DESCRIBES NEUROMARKETING: Majority (43.3% of respondents associate the concept primarily with neuromarketing approaches.

CONCLUSION:

The research shows that young adults, particularly those belonging to middle and upper-middle income brackets, are heavily swayed by factors like brand reputation, emotional resonance, and quality of customer service. Although influencer marketing and social media campaigns are effective, buying choices are frequently influenced by a mix of logical reasoning and emotional ties. Sensory marketing, especially through visuals and emotional messaging, plays a crucial role in shaping consumer preferences. While neuromarketing is gaining traction, consumer awareness remains low, with many individuals maintaining a neutral stance on the topic. Companies that effectively align their marketing strategies with these findings can cultivate deeper customer connections and enhance brand loyalty.