

A STUDY ON CONSUMER AWARENESS TOWARDS NEUROMARKETING

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Abstract

With the use of neuromarketing, we can better understand the thought processes that underlie the consumer purchasing decisions. It is relatively a very new concept in our country and most people are not aware of the concept in a detailed preview yet. This particular exploratory paper has collected data from different consumers of varied age regarding the awareness of the concept as well as the tools utilized in it. This piece of work also tried to examine the decisions made by consumers while purchasing something without directly asking them the questions but by making them answer in an indirect means through the questions using neuro marketing objectives. Everyone who participated in the survey agreed that neuro marketing is not a deceptive strategy for peddling needless goods and services. Consumers also were made aware of the tools that are utilized in neuro marketing which are FMRI, EEG, PUPILOMETER and many other machines. This study tries to contribute to the existing knowledge on neuro marketing which is limited as well as a bussing strategy in the Indian context.

Keywords: Neuro marketing, purchasing decisions, budding concept, FMRI, EEG, PUPILOMETER.

INTRODUCTION

Neuromarketing, also referred to as consumer neuroscience, is the study of the brain with the goal of predicting and, in some cases, even influencing consumer behavior and decision-making. Neuromarketing, which was up until recently thought of as an extravagant “frontier science”, has gained support over the past five years thanks to a number of ground-breaking research showing how it might benefit marketers.

Marketers continue to question if neuromarketing is worthwhile even though its validity is well-proven. What equipment is most helpful? How is it properly done? Marketers must comprehend the variety of strategies at play, how they are applied in both academics and industry, and what future prospects they may offer. [2]

One of the difficulties is that, in some senses, all marketing is said to be neuromarketing because advertising efforts nearly always aim to trigger brain activity that will result in a desired behavior like buying a product. However, in the same way, that declaring “everything is chemistry” is correct only but unhelpful, that is not a particularly practical way to look at neuromarketing. As a result, we don't include initiatives that don't directly use neuroscience research, either through brand-new experiments or by exploiting the results of previous studies. [3]

Even if neuromarketing is debatable, it is nonetheless crucial for businesses. It includes several methods that help brands recognize and satisfy the demands and preferences of their customers. Additionally, they can research how consumers react to various commercials, marketing initiatives, and product packaging. As a result, business owners are better equipped to select the most advantageous option from those offered and increase the efficiency of campaigns as well as initiatives.

Along with many benefits discussed, neuromarketing has other advantages too:

- It helps to discover the subconscious reactions that consumers have to various advertisements, designs, and marketing techniques. Create new, original strategies that speak to the needs and desires of the target audience.
- Improves advertising campaigns and strategies.
- Investigates the feelings and emotions that particular advertisements, logos, and phrases elicit in consumers.
- Enhances client satisfaction.
- Boosts sales.
- Gains a competitive edge.

Neuro marketing uses functional magnetic resonance imaging (fMRI), electroencephalogram (EEG) tools to scan people's brains and evaluate physiological and neural signals to specific ads, packaging, design, etc., Brain's responses are crucial for companies since they provide business owners with a clear picture of customers' needs and wants.

Marketers show ads, packaging, or product design to customers and track their reactions and brain activity. After they get responses and measure the changes, companies can decide what steps they need to take next. Brain scanning allows brands to track every brain activity such as eye movement, the changes of pupils, face expression, heart rate, and emotions and empower brands with customer insights. Based on the given results, companies can decide how to improve the ad content, product packaging and design, website design, and branding to hook the audience's attention and resonate with customers' needs.

REVIEW OF LITERATURE

According to **Leif Brandes, Laura chamberlain, Carl senior, (2017)**, "In the paper, they reflected on last decade of research in the field of neuromarketing and present aschematic illustration of the basic process of a typical neuromarketing study. They identified 3 critical points of interest in the given illustration that have not received enough discussion in neuromarketing relevant literature, and which is considered to be a problem. These are the dominance of event-based designs in neuromarketing, the potential of alternative modalities in neuromarketing and the current focus on reverse inference in neuro marketing. They argued that, taken together, these points have substantive implications for the development of a more reflective neuromarketing, which in turn has greater potential to make a positive impact

on marketing knowledge, marketing practice and public perceptions of marketing activity in general.” [4]

According to **nick lee, Amanda J. Broderick, Laura Chamberlain, (2007)**, “recent years have seen advances in neuro imaging to such an extent that neuroscientists are able to directly study the frequency, location, and timing of neuronal activity to an unprecedented degree. However, marketing science has remained largely unaware of such advances and their huge potential. In fact, the application of neuroimaging to market research – has caused considerable controversy within neuroscience circles in recent times. In the paper they attempted to widen the scope of neuromarketing beyond commercial brand and consumer behaviour applications, to include a wider conceptualisation of marketing science. Drawing from general neuroscience and neuroeconomics, neuromarketing as a field of study is defined, and some future research directions were suggested.”[5]

According to **Janaina De Moura Engracia Giraldi, (2014)**, “they have surveyed main neuromarketing techniques used in the world and the practical results obtained. Specifically, the objectives are to identify the main existing definitions of neuromarketing; to identify the importance and the potential contributions of neuromarketing; to demonstrate the advantages of neuromarketing as a marketing research tool compared to traditional research methods; to identify the ethical issues involved with this particular research, to present the main neuromarketing techniques that are being used in the development of marketing research, to present studies in which neuromarketing research techniques were used; and to identify the main limitations of neuromarketing. The results obtained allowed an understanding of the ways to develop, store, retrieve and use the information about consumers, as well as ways to develop the field of neuromarketing.”[6]

According to **Weng Marc Lim,(2018)**, “the article adopted and integrated knowledge enquiry approach and systematically reviews through content analysis and draws themes through thematic analysis to explain the concept of, methods for, ethical issues related to, and contributions from neuromarketing and to discuss the future role of neuromarketing as a provider of new impetuses for advancing marketing science. In doing so, the present article clarifies the key questions about neuromarketing and identifies multiple avenues to meaningfully extend existing lines of inquiry on neuromarketing. They hoped that the particular article would assist neuromarketers in unlocking the potential of neuromarketing to contribute to marketing theory and practice.”[7]

According to **Christophe Morin, (2011)**, “neuromarketing is an emerging field that bridges the study of consumer behaviour with neuroscience. Controversial when it first emerged in 2002, the field is gaining rapid credibility and adoption among advertising and marketing professionals. Each year, over 400 billion dollars is invested in advertising campaigns. Yet, conventional methods for testing and predicting the effectiveness of those investments have generally failed because they depend on consumers’ willingness and competency to describe how they feel when they are exposed to an advertisement. Neuromarketing offers cutting edge methods for directly probing minds without requiring demanding cognitive or conscious participation. This paper discussed the promised of burgeoning field of neuromarketing and

suggests it has the potential to significantly improve the effectiveness of both commercial and cause-related advertising messages around the world.”^[9]

According to **Dijana Cosic, (2016)**, “neuromarketing is a fairly new discipline that combines behavioural psychology, economics and consumer neuroscience. With the help of different techniques, such as functional magnetic resonance, Electroencephalography, positron emission tomography, eye tracker etc., it measures respondent’s reaction to different stimuli. It allows the researchers to gain insight into unconscious drivers of choice and preference which they would not be able to discover with traditional methods (focus groups, in depth interviews and questionnaires). In market research, most widely used neuromarketing technique is eye tracker the associates conducted a typical market research study of a TV commercial with a help of a stationary eye tracker and “Gazepoint” software. The study discovered that one scene in the commercial drew attention much more than the others. As neuromarketing raises ethical issues, the literature was reviewed, related issues and were presented.” [8]

According to **Benneth Chiemelie Iloka, (2020)**, “neuroscience, the study of the brain and how humans process their daily activities, has always been part of other fields (such as neuropsychology in the psychological context). However, 2002 is known as the year neuromarketing was first coined by professor Ale Smidts, describing it as the study of the brain and how it processes activities about consumer context (purchase behaviour – how and why they buy). Further reviews showed that before coining the term, companies were already adopting neuromarketing through systems such as functional magnetic resonance imaging (fMRI). To demonstrate its essence, this review discussed its historical dimension, and findings show that it is a revolutionary area of marketing. Although limited empirical studies have been conducted within the context of neuro marketing, the reviews shows that it can address the challenges of reliability, validity, and generalizability it that come with the conventional approaches in marketing research. However, is suggested that the field of neuro marketing needs empirically-based works, urgently.”^[10]

OBJECTIVES OF THE PAPER

1. To evaluate the awareness regarding neuro marketing amongst the consumers.
2. To measure the factors influencing consumer decision making with neuro marketing.

Explanation

To analyse the above mentioned objectives of the research paper, a questionnaire was framed and data from 162 respondents was collected and further analysis is done using different statistical tools like:

1. Correlation.
2. Independent t-test.
3. Chi square test.

STATISTICAL ANALYSIS

Brand Consciousness

Ho: There is no significant association between the awareness levels on neuro marketing and brand consciousness.

H1: There is significant association between the awareness levels on neuro marketing and brand consciousness.

Awareness levels on Neuro marketing						
		Brand consciousness				Total
		2	3	4	5	
Brand consciousness is the main motivator behind your purchase.	2	6	5	12	13	36
	3	3	14	23	14	54
	4	5	9	25	14	53
	5	0	3	4	12	19
Total		14	31	64	53	162

Chi-Square Tests			
	Value	df	Asymptotic Significance(2-sided)
Pearson Chi-Square	16.833 ^a	9	.051
Likelihood Ratio	17.164	9	.046
Linear-by-Linear Association	2.853	1	.091
N of Valid Cases	162		

a. 5 cells (31.3%) have expected count less than 5. The minimum expected count is 1.64.

Inference

From the chi square test it is observed that there is significant association between the awareness levels on brand consciousness and it differs according to the age groups.

Awareness regarding neuro marketing

Ho: There is no significant difference in the awareness levels on neuro marketing between different males and females.

H1: There is significant difference in the awareness levels on neuro marketing between different males and females.

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Neuromarketing is a general term that you have heard on regular basis	female	61	3.11	.858	.110
	Male	101	3.48	.986	.098

Independent Samples Test										
	Levene's Test for Equality of Variances		t-test for Equality of Means							
	F	Sig.	T	f	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
					One-Sidedp	Two-Sidedp			Lower	Upper
Awareness of neuro marketing	3.793	.053	-2.365	160	.010	.019	-.360	.152	-.662	-.059

Inference

From the t test, it is observed that there is significant difference in the awareness levelson neuron marketing between different males and females.

Neuro marketing and personal motivators

Ho: There is no significant correlation between the neuro marketing and its personal motivators of theconsumers to buy the product

H1: There is significant correlation between the neuro marketing and its personal motivators of theconsumers to buy the product

Correlations

Neuromarketing awareness		A satisfied smile appearson yourface when you aresatisfied with your purchase	Your eyes get dilated when you see the product you like	Multiple brands stimulate curiosity in your brain	Do you agree to measure your mental movements while purchasing anything	Encounters of multiple brands at the same place emerge ina lot of thinking activity for you
Awareness on neuromarketin g	Pearson Correlation	1	.226**	.443**	.457**	.430**
	Sig. (2- tailed)		.004	<.001	<.001	<.001
	N	162	162	162	162	162
A satisfied when you are satisfied with your purchase	Pearson Correlation	.226**	1	.440**	.253**	.218**
	Sig. (2- tailed)	.004		<.001	.001	.276
	N	162	162	162	162	162
Your eyes get dilated when you see the product you like	Pearson Correlation	.443**	.400**	1	.244**	.247**
	Sig. (2- tailed)	<.001	<.001		.002	.002
	N	162	162	162	162	162
Multiple brands stimulate curiosity in	Pearson Correlation	.457**	.253**	.244**	1	.108
	Sig. (2- tailed)	<.001	.001	.002		.171
	N	162	162	162	162	162

your brain							
Do you agree to measure your mental movements while purchasing anything	Pearson Correlation	.540**	.086	.247**	.108	1	.097
	Sig. (2- tailed)	<.001	.276	.002	.171		.220
	N	162	162	162	162	162	162
Encounters of multiple brands at the same place emerge in a lot of thinking activity for you	Pearson Correlation	.430**	.218**	.193*	.651**	.097	1
	Sig. (2- tailed)	<.001	.005	.014	<.001	.220	
	N	162	162	162	162	162	162

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

* . Correlation is significant at the 0.05 level (2-tailed).

Inference

From the above table it is observed that there is significant correlation between the neuro marketing and its personal motivators of the consumers to buy the product.

Neuro marketing and product attributes

Ho: There is no significant correlation between the neuro marketing and product attributes.

H1: There is no significant correlation between the neuro marketing and product attributes.

Correlations

Awareness on Neuromarketing		Improper packaging does not affect your purchase	Product design of the accessories is your preference	“QUALITY” is the most superior feature of a product according to you	Advertisements regarding mobile accessories propelled your purchase
Awareness on Neuromarketing	Pearson Correlation	1	.209*	-.023	-.133
	Sig. (2- tailed)		.011	.772	.092
	N	162	162	162	162
Improper packaging does not affect your purchase	Pearson Correlation	.209*	1	.218**	.061
	Sig. (2- tailed)	.011		.008	.467
	N	162	162	162	162
Product design of the accessories is your preference	Pearson Correlation	-.023	.218**	1	.193*
	Sig. (2- tailed)	.772	.008		.014
	N	162	162	162	162
“QUALITY” is the most superior feature of a product according to	Pearson Correlation	-.133	.061	.193*	1
	Sig. (2- tailed)	.092	.467	.014	
	N	162	162	162	162

you						
Advertisements regarding mobile accessories propelled your purchase	Pearson Correlation	.117	.210*	.354**	.162*	1
	Sig. (2- tailed)	.142	.011	<.001	.040	
	N	162	162	162	162	162

*. Correlation is significant at the 0.05 level (2-tailed).

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

Inference

From the above table it is observed that there is significant correlation between neuro marketing and different product attributes.

Relation between neuro marketing and techniques used to assess it

H0: There is no significant correlation between neuro marketing and techniques used for assessing it.

H1: There is a significant difference between neuro marketing and techniques used for assessing it.

Neuromarketing		Eye tracking is the method that you use to measure while looking at the advertisements	Pupillometer is the method you are aware of	FMRI, MRI are the machinery that you have knowledge on
Neuromarketing	Pearson Correlation	1	.447**	.544**
	Sig. (2- tailed)		<.001	<.001
	N	162	162	162
Eye tracking is the method that you use to measure while looking at the advertisement	Pearson Correlation	.447**	1	.369**
	Sig. (2- tailed)	<.001		<.001
	N	162	162	162
Pupillometer is the method you are aware of	Pearson Correlation	.544**	.369**	1
	Sig. (2- tailed)	<.001	<.001	
	N	162	162	162
	Sig. (2- tailed)	<.001	<.001	<.001
FMRI, MRI are the machinery that you have knowledge on	Pearson Correlation	.516**	.412**	1
	Sig. (2- tailed)	<.001	<.001	
	N	162	162	162
	Sig. (2- tailed)	<.001	<.001	<.001

Inference

From the above analysis it is observed that the correlation is significant between the neuro marketing and techniques used to assess it.

OBSERVATIONS

1. It is found that brand consciousness of the product differs according to the different age groups. As it is a well known fact that branding is one of the key concepts of any kind of marketing and it is the same for neuro marketing too.
2. Males and females in the respondents showed significant difference regarding the awareness of the novel concept of neuro marketing.
3. Most of the respondents agreed that they would have a satisfied smile over their faces when the good or service they purchased satisfies their wants or meets their expectations.
4. Respondents told that eyes dilation is not so common a factor when they purchase the product they like.
5. Most of the respondents agreed to the fact that their brain would get curious enough when they see multiple brands at a same place.
6. According to the statistical analysis it is found that the respondents positively reacted towards measuring their mental movements while they are purchasing something.
7. It is found that the statement that seeing different brands at same place would emerge a lot of thinking activity in brains of the respondents.
8. There is a significant correlation between the awareness of neuro marketing and the personal motivators of consumers while buying a product.
9. Respondents stated that improper packaging would definitely disturb their experience of purchase as well as impact future purchases too.
10. Design of the product also plays a vital role while purchasing the accessories of any product and the consumers are very particular about the design too.
11. Quality is considered to be the most superior feature of all product attributes and the consumers are even ready to pay higher prices for qualitative products.
12. It is identified that advertisements propel most of the purchases. The consumers opined that the advertisements are the bridges that would carry information regarding the unknown product information to them.
13. There is a significant positive correlation between neuro marketing concept and the different physical attributes of the products.
14. The respondents who reacted to the questions mostly do not have any kind of awareness of the techniques used in neuro marketing but are open to try them on themselves to measure the responses.
15. There is a positive significant correlation between the techniques used in neuro marketing and consumer decision making.

CONCLUSION

The objective of this particular study is to review the most recent investigations that analyse neuromarketing as a tool that connects the consumers and decision making through different options. This review highlights the conceptualization of the neuro marketing and decision making. For decades, marketing research methods have aimed to explain and predict the effectiveness of advertising campaigns. For the most part, however, conventional techniques have failed miserably. Since emotions are strong mediators of how consumers process messages, understanding and modelling cognitive responses to selling messages has always been a methodological challenge. For instance, researchers have primarily relied on consumers' abilities to report how they feel about a particular piece of advertising, either in a confidential settingsuch a face-to-face interview, a survey, or in a group setting such as a focus group. Numerous factors motivate research participants to distort the reporting of their feelings, including incentives and peer pressure.

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Questionnaire

“A STUDY ON CONSUMER AWARENESS TOWARDS NEURO MARKETING”

NAME:

AGE:

GENDER:

INCOME GROUP:

1. Neuromarketing is a general term you have heard on regular basis.
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
2. FMRI, MRI are the machinery you have knowledge of.
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
3. Eye tracking is the method you are used to measurement while looking at advertisements.
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
4. Pupillometer is the method you are aware of.
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
5. Do you agree to measure your mental movements while purchasing anything?
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
6. Color of the accessories you buy would matter to you.
 - a. Strongly Agree
 - b. Agree

- c. Neutral
 - d. Disagree
 - e. Strongly Disagree
7. Brand consciousness is the main motivator behind your purchase.
- a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
8. Advertisements regarding mobile accessories propelled your purchase.
- a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
9. Improper packaging does not affect you.
- a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
10. Product design of the accessories is your preference.
- a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
11. A satisfied smile appears on your face when you are satisfied with your purchase.
- a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree

12. Your eyes get dilated when you see the product you like.
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
13. "QUALITY" is the most superior quality of a product according to you.
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
14. Encounters of multiple brands at the same place engage in a lot of thinking activity for you.
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree
15. Multiple brands stimulate curiosity in your brain.
 - a. Strongly Agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly Disagree