



**SRI VENKATESWARA INTERNSHIP PROGRAM
FOR RESEARCH IN ACADEMICS
(SRI-VIPRA)**



Project Report of 2022

**“NEUROMARKETING: A Comparative Analysis between
two Chocolate Brands’ Advertising Strategies”**



1961 - 2021
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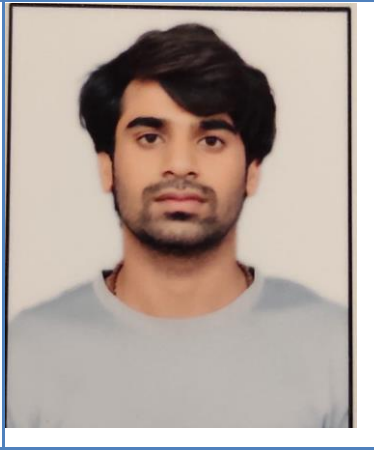






SRIVIPRA PROJECT 2022

Title: NEUROMARKETING: A Comparative Analysis between two Chocolate Brands' Advertising Strategies”

List of students under the SRIVIPRA Project

S.No	Name of the student	Course	Photo
1	RISHITA AHUJA	B.COM (HONS.)	A portrait of a young woman with long dark hair, wearing a white shirt, smiling.
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Signature of Mentor

Certificate

This is to certify that the aforementioned students from Sri Venkateswara College have participated in the summer project SVP titled “NEUROMARKETING: A Comparative Analysis between two Chocolate Brands’ Advertising Strategies”.

The participants carried out the research project work under my guidance and supervision from 21st June 2022 to 25th September 2022. The work carried out is original and carried out in an online mode.

A photograph of a handwritten signature in blue ink on a white background. The signature is written in a cursive style and appears to be 'M. Srinivas'.

Signature of Mentor

Acknowledgements

At the very onset of this report, we would like to extend our sincere and heartfelt obligation towards all the personages who have helped us in this endeavour. This Project and research behind it would not have been possible without the exceptional support of our mentor **Ajit Singh**, Assistant Professor, Commerce Department. His enthusiasm, knowledge and exacting attention to the details have been an inspiration and kept our work on track. We are ineffably indebted to our principal, **Prof. C Sheela Reddy** for providing us the opportunity and encouragement to accomplish this assignment. We are also grateful for the insightful work of all the authors which has helped us to improve this study in Innumerable ways. Finally, it is with true pleasure that we acknowledge the contributions made by each and every person who directly or indirectly helped us to complete this project report.

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Abstract

This research project was carried out to study the applications and impact of neuromarketing techniques in the Delhi NCR region. The project specifically studied the influence of audio-visual tools and techniques, consumer preferences, criteria for selection and priorities taken into consideration. The project relied on both self reporting as well as dynamic interfaces to study the conscious and unconscious neuropsychological responses to the questions pertaining to choice between two brands of chocolate, i.e, Kitkat and 5 Star. The 170 responses were analysed to assess the presence/absence of any relation between the assessed factors and the final brand choice. Mainly, the impact of labelling, branding strategy, and promotional advertisements were assessed. The results obtained suggest that effective branding helps build brand recall and a distinct identity for the product in the minds of the perceiver; when complemented with full-fledged promotional campaigns, these can have a real and noticeable impact on the positioning of the product on offer.

Key Words: Neuromarketing, Consumer, Perception, Brand Value, Brand Recognition, Brand Image, Brand Satisfaction, Brand Recall, Packaging, Branding Strategy, Stimulus.

Objectives

1. To track and highlight the history of neuromarketing and its evolution as an effective tool for branding, designing marketing campaigns, and strategic decision making.
2. Identifying and understanding the influence of audio-visual tools and techniques, consumer preferences, criteria for selection and priorities in the marketing of a product.
3. Comparing the tools used by the sample brands for designing packaging, advertisements, taglines and their relative influence on consumers' buying decision.
4. Understanding the parameters considered by consumers when comparing products like brand loyalty, pricing, availability, familiarity, etc.
5. Studying the influence of colours, fonts on brand recall, on consumer buying behaviour.

Introduction

"Neuro-marketing is not Manipulation, it is Mindful Merchandising."

One of the main objectives of research into marketing communication is to measure its efficiency. For a long time, there has been a wide variety of measuring techniques and instruments used to better understand consumer behaviour and the effectiveness of advertising messages, although all have certain limitations and share considerable bias which makes full and accurate knowledge of consumer thinking impossible to obtain. Among other aspects, it is worth highlighting the large dependence on the will of consumers and their ability to describe their levels of attention, emotions, preferences, and future purchasing behaviour in relation to an advertising campaign which they have been exposed to previously, this is where neuromarketing comes into play.

Prof. Ale Smidts describes the goal of neuromarketing as “a better understanding of the customer and his reaction to marketing stimuli by measuring the processes in the brain (neuroimaging and biometrics) and including them in the development of both theory and stimuli”.

Approximately 95% of mental processes take place in the non-conscious mind, which is precisely where the mechanisms which condition decisions are found in addition around 90% of our purchases are impulse buys and 95% of purchasing decisions are organized in the subconscious area of the brain. Neuromarketing seeks to find patterns of activation of brain circuits while receiving persuasive messages, in order to predict human behaviour in future situations. In other words, it studies the responses of the brain to marketing communications and the adjustment of those messages based on the feedback received with the aim of obtaining better replies without the conscious participation of the subjects, thus providing objective and scientifically measurable, emotional, and cognitive results

Neuromarketing is emerging as a promising tool for brands, which can not only catch consumers' attention but also influence their purchase decisions. Thanks to neuromarketing research, marketers no longer have to rely as heavily on consumer self-reporting. For starters, it can be difficult to get people to participate in surveys and focus groups. And even when there's a lot of feedback given, the results can be biased or inaccurate. Neuromarketing bypasses conscious thinking and identifies automatic reactions that tend to be universal across the population. However, despite its development in the academic world, in the professional sector, it is still in its primitive stage

The application of neuromarketing techniques as a method of advertising and packaging has recently started to gain popularity in the commercial sector, but there are still some apprehensions about the methods and metrics commercially offered and the interpretation of their findings. This represents the motivation of this

investigation: to compare the neuromarketing methodologies and measurements commercially used by two rival products, KitKat and 5 Star.

The technique chosen for data gathering was a survey conducted on an interactive platform through which we gather insight about what really happens to consumers when they are exposed to the advertising message, packaging, design and the overall standing of a product.

History of Neuromarketing

“Businessmen will eventually realize that customers are merely bundles of mental states and that the mind is a mechanism that we can affect with the same exactitude with which we control a machine in a factory.” -

Hugo Münsterberg (1913)

Hug Munsterberg, the father of organizational psychology was known as one of the first people to go on record of showing great interest in this field, as far back as 1913. However, it wasn't until the 90s, where we began to see biomedical imaging technology eventually progressing to a point where we could gain real insight from the neural activity of the human brain.

While many have stated that the term "neuromarketing" cannot be attributed to anybody, it is widely agreed that Professor Ale Smidts, from the Rotterdam School of Management of the Erasmus University, was the first person to use the term neuromarketing in 2002. It was used to describe the adoption of neuroscientific techniques by those in the marketing field. Following this conceptualization, two US companies, BrightHouse and SalesBrain, were the first to offer neuromarketing consulting and research services; they promoted the adoption of technology and knowledge from the cognitive neuroscience field within the business context.

One of the recent works was done by **Constantinescu (2019)** and is focused on attitude evaluation on the use of neuromarketing approaches in social medial, matching corporate purpose, and the benefits of the customer for sustainable business growth.

The work of **Solomon (2018)** focused on the applications, challenges, and promises of neuromarketing. It was pointed out in this study that the application of neuromarketing tools is bound to yield a profound impact in the emerging economies, especially as their populations and consumer purchasing potentials are rapidly increasing

Arthmann & Li (2017) focused on neuromarketing as the art and science of marketing and neuroscience enabled by the Internet of Things (IoT) technologies, predominantly focused on the application of neuromarketing in the internet age, as well as the benefits that come with such applications.

Nemorin & Gandy (2017) focused on exploring neuromarketing and its relevance to remote sensing, social and ethical concerns. The key objective was to evaluate the consequences of neuromarketer's reliance on direct and indirect forms of remote sensing.

Kumar's (2015) study focused on neuromarketing as the new science of advertising. The work focused on investigating how the attention levels influence users from the neuromarketing perspective, and the research was conceptual.

Murphy (2008) conducted one of the earliest studies on neuromarketing, and it focused on the neuroethics of neuromarketing. The main objective was to assess the ethical issues concerning neuromarketing. Based on literature review and personal opinions, they categorized these ethical issues into two; 1) protection of various parties that might be harmed or exploited via neuromarketing research or deployment of neuromarketing tools; and 2) protection of consumer autonomy if neuromarketing reaches a critical level of effectiveness.

The First Neuromarketing Experiment

In a study from the group of Read Montague published in 2004 in *Neuron*, 67 people had their brains scanned while being given the "Pepsi Challenge", a blind taste test of Coca-Cola and Pepsi. Half the subjects chose Pepsi, since Pepsi tended to produce a stronger response than Coke in their brain's ventromedial prefrontal cortex, a region thought to process feelings of reward. But when the subjects were told they were drinking Coke three-quarters said that Coke tasted better. Their brain activity had also changed. The lateral prefrontal cortex, an area of the brain that scientists say governs high-level cognitive powers, and the hippocampus, an area related to memory, were now being used, indicating that the consumers were thinking about Coke and relating it to memories and other impressions. The results demonstrated that Pepsi should have half the market share, but in reality consumers are buying Coke for reasons related less to their taste preferences and more to their experience with Coke.

Importance Of Neuromarketing

1. Getting the full image from customers

Traditional marketing research studies can only give so much information about the opinions of consumers. Whether we are talking about online surveys, reviews & testimonials, phone calls, or reactions on social media – it all gives an external image of how consumers view your business. One of the benefits of

neuromarketing is that you can tap into the inner reactions of consumers when it comes to your brand. You can clearly establish certain patterns that could help you stay ahead of the competition long-term.

2. Uncover emotional and non-conscious responses

On an average day, most of us go through a journey of different emotions. Some of these are fast and fleeting, others may linger but we barely notice them. Yet these feelings and emotions can be influencing our behaviour, such as what we choose to buy. Neuromarketing methods can often help uncover the triggers to these emotional responses in a way that just asking questions can't.

3. Measure fleeting reactions that people can't remember

When studying experiences that evolve over time, such as watching a TV ad, neuro measures can capture responses moment-by-moment in real-time. Not only does this give valuable diagnostic information on how to better edit an ad, but it would be very hard if not impossible to gain through traditional question-based methods.

4. Measure priming effects

Whenever we look at something, whether it be a poster, logo, or package, it activates a range of associated ideas in our minds. Neuroscientists call this effect priming. Some of these ideas – which neuro techniques can measure – relate to the feelings and concepts that an ad or brand logo may trigger in us. Some of them activate goals in us, often without our conscious awareness. For example, your desire to treat yourself to something expensive may have been triggered earlier in the day by seeing a poster for a luxury brand.

5. Scalability

Whilst an experienced and talented market researcher can often get around some of these challenges through careful questioning and reading between the lines of what people says, there are only so many people they can question. Neuromarketing offers research techniques that companies can scale up, often internationally, using comparable methods, hence gaining comparable results.

Tools and Techniques of Neuromarketing:

Traditional

Traditional marketing research tries to understand a consumer's decision-making process from a conscious viewpoint, whereas neuromarketing aims to understand customer behavior. A key point to remember is that people are naturally contradictory in nature

Researchers have primarily relied on **consumers' abilities to report** how they feel about a particular piece of advertising, through face-to-face interviews, a survey, or focus groups.

Although all the stimuli humans encounter are filtered through the unconscious processing system first, the conscious decision-making process is also important. Traditional marketing research has given us plenty of valuable insight into why people make the buying decisions they do – or at least why they think they make them.

Modern

EEG

In the presence of a particular stimulus like a piece of advertising, neurons produce a tiny electrical current that can be amplified. These electrical currents have multiple patterns of frequencies called brainwaves associated with different states of arousal.

Generally, the measure of alpha-band waves (8–13 Hz) in the left frontal lobe indicates positive emotions (acceptance behavior). On the other hand; electrical activity in the right frontal lobe is correlated with negative emotions (withdrawal from an experience).

MEG

Neuronal activity creates a magnetic field that can be amplified and mapped by MEG.

FMRI

This uses an MRI scanner to image the change of blood flow in the brain. When neurons fire, they need to use energy which is transported by the blood flow and quickly metabolized. A key element for a marketing researcher to understand is the contrast of the BOLD (Blood Oxygen Level Dependent).

Eye Tracking

Eye tracking can measure attention (via the eyes' fixation points) and arousal (via pupil dilation); facial-expression coding (reading the minute movement of muscles in the face) can measure emotional responses; and heart rate, respiration rate, and skin conductivity measure arousal.

So while it may be tempting to get caught up in a debate over which type of research gives us better data – traditional or neuromarketing – savvy marketers would be wise to utilize both, because each method measures different factors and gives us different information, all of which is valuable to some degree.

Understanding the Brain

From the marketing point of view, there are three parts of the brain that marketers need to know about in order to market their products: the rational brain (scientifically referred to as the Prefrontal Cortex), the emotional brain (scientifically referred to as the Limbic System), and the decision-making brain (scientifically referred to as the Frontal Lobe).

The PFC play a critical role in executive function, i.e., processes that focus on controlling shortsighted behaviour to be able to act with a goal in mind. This made lot things like self control, planning, decision-making, and problem-solving.

One general model of PFC function is that it receives sensory information about the external world, uses that information to plan responses, and then communicate your other areas of the brain to enact a response which might involve anything ranging from movement to redirection of attention.

The limbic system consist of four parts first is hypothalamus, amygdala, thalamus, hippocampus.

- Thalamus functions like a sensory realisation which means the things that you see hear, taste, touch, the thalamus drive direct this is senses into the appropriate areas in the cortex, as well as other areas of the brain.
- Amygdala is sometimes called the aggression Centre and the experiments have shown that its stimulation evoke the feeling of anger, violence, fear and anxiety.
- Hippocampus plays a key role in forming new memories.
- Hypothalamus is a very tiny structure that regulates the autonomic nervous system by controlling the endocrine system, by triggering the release of hormones into your bloodstream. This also involved in regulating other basic drives like hunger, thirst, sleep.

The frontal lobe is the part of the cerebral cortex and is the largest of the brain's structures. They are the main site of cognitive functions. The frontal lobe contains number of important substructures including the prefrontal cortex, orbitofrontal cortex, motor and premotor cortices, and Broca's area. The structure is involved in attention, language and decisions. It is also involved in executive processes (voluntary behaviour such as decision making, planning, problem-solving,thinking), by voluntary motor control, processing etc.

In the brain, there are two halves, the right half and the left half, which are connected by a bundle of nerve fibres in the corpus callosum. We have wrinkles on the exterior surface of our brain, called Cerebrum. People's intelligence is determined by the amount of wrinkles on their brains. The Cerebellum is actually divided into four lobes:-

- The first one is called the Frontal Lobe. Its function is to control problem-solving and intellectual activities. Some other functions or the frontal lobe is that it controls attention (Levi's ad that forces you to dance along), judgement, behaviour and muscle movement. For example when you go to market to buy any product from the variety, you use your judgement to select the best for your purpose.
- A parietal lobe is responsible for sensing pain. It also helps in reading and understanding statements.

- The temporal Lobe controls visual and auditory memory. For instance, the concept and editing of Fevicol ad which get stored in your brain once you watch it.
- The Occipital Lobe helps in the recognition of color, words and movement when you are in the dilemma to choose one product.

How do marketers convince us to buy their product?

The consumer's occipital lobe is the area which is responsible for processing visual information. It receives and processes visual stimuli from the eyes.

Auditory information will be processed in the temporal lobe, the region of the brain responsible for processing sounds. Wernicke's area, the part of the brain crucial to comprehending speech, resides here. Activity in the temporal lobe has been found to increase when people listen to emotionally significant music, suggesting there is power in the use of music. It's part of why Nike ads like this have such an effect on people. The temporal lobe is also responsible for recognizing human faces and objects and for remembering semantic knowledge of objects.

Humans prioritize the perception of human faces because of the fusiform face area in this region. The brightly dressed, ever smiling clown character is hard to miss outside McDonald's outlets even with the brand mascot "Ronald McDonald" fading in prominence.

Using clear and well-known imagery in an advertisement may promote a positive association with the product, since familiar faces and objects tend to be more easily recognized and liked. This could also be a reason for trends in design—when a new company uses similar typefaces and colors to those in the market, people may be already primed to see them in a positive light.

Activation of the amygdala is then linked to attention allocation and prioritized memory. Ads that are effective in provoking an emotional response from the consumer could increase the chances of them being remembered because emotions affect memory through the amygdala.

The frontal lobe is the part of the brain associated with personality. Using Sorter Segments to predict a customer's personality and create targeted messaging or creative, marketers take advantage of the differences in the way people process information in their frontal lobes

Furthermore, the frontal lobe is responsible for intelligence, memory, temper, and concentration, as well as high-level cognition. In advertisements that contain informational text regarding the product's future impact, the frontal lobe and its relation to planning can be activated. The earliest neuromarketing study put this type of information to use by studying brain activity in relation to brand choice, Pepsi versus Coke.

Neuro Selling

So should companies invest in neuromarketing whether through brain scans or cheaper techniques? Some already have: NBC and TimeWarner have operated neuromarketing units for years; technology companies such as Microsoft, Google, and Facebook have recently formed units. Karmarkar says that in-house neurocapability is still out of reach for most organizations simply because of the expense but that smaller companies can look to partner with specialist consulting firms.

However, she and other experts warn that the field is plagued by vendors who oversell what neuromarketing can deliver. “There’s still a lot of snake oil out there,” Cerf says, adding that he has been approached by more than 50 companies with a “neuroscience offering” looking for his endorsement. “I only found six that meet a basic standard I would consider helpful for managers,” he says.

Limitations of Neuromarketing:

- **Manipulative:** The executive director of U.S. Right to Know, Gary Ruskin, and other anti-marketing activists warn that neuromarketing may exploit customers' anxieties in order to influence them or promote particular neurological responses to stimuli. According to marketers, such precise manipulation is neither desirable nor feasible.
- **No new information:** Critics assert that neuromarketing makes use of science to provide a more complicated explanation of what can be inferred intuitively. According to them, it merely confirms what marketers already know about customers.
- **High Cost:**
The results coming out of neuromarketing studies usually do not compensate for its high cost and the complicated procedures.

Neuromarketing has not yet fully penetrated advertising research academia for the given reasons: First, very few marketing researchers have formal training in cognitive neuroscience. Second, marketing researchers have long feared the public outcry against potential ethical and privacy issues introduced by the use of neuroimaging technology for commercial purposes.

Literature Review

Neuroimaging provides powerful lenses through which we can observe and understand the mind of a consumer. (Christophe Morin, 2011).

Applications for Effective Branding

In order to build a strong product brand name, it is important to develop a recognizable image of the product. Thus, it is necessary to assess how consumers perceive the brand image, the value of the brand and its satisfaction. However, it is difficult to estimate what affects consumer's loyalty. Not only is consumer loyalty behavior affected by consumers, but also by managers and merchants who assess the significance of the brand and appropriate marketing strategy (Yasin, et al, 2007).

Building strong relationships with consumers improves the way which encourages them to accept the brand, their attitudes, and behavior towards the brand. However, consumer motivation to enter long-term relationships with the brand remains ambiguous (Fournier, 1998; Marin and Ruiz, 2007). These relationships are largely influenced by the information accessible for deciding to purchase. In order to test the conceptual model, the following dimensions have been applied in the project: brand image, brand satisfaction, the perceived value of the brand and consumer loyalty.

Brand image

Brand image is a subjective, perceptual phenomenon that is reflected in feelings of consumers based on their memory of these products (Keller, 1998; Okada and Reibstein, 1998). Bian and Moutinho (2011) add that brand image refers to an association of the brand in the consumer's memory and plays a key role in making purchasing decision because it affects their buying decision. Wang and Yang (2010) have shown in their research that brand image plays a significant role in explaining the effects of loyalty and intent. When the brand has a more attractive image it is likely that consumers will be better connected with the brand (Islam and Rahman, 2016) and brand image will have greater value for consumers.

The project is based on the following hypotheses: Hypothesis 1: Brand image has a positive impact on brand satisfaction Hypothesis 2: Brand image has a positive impact on brand value Hypothesis 3: Brand image has a positive impact on brand loyalty.

Brand satisfaction

Brand satisfaction is interacting with consumer's assessment and post-consumer behavior that evaluates the product through different attributes (Krystallis and Chrysochou, 2014). Nam et al. (2011) described brand satisfaction as a sum of previous experiences with these products, based on the interdependence between expectations and perceptions after consumption. If expectations are higher than perceptions, brand satisfaction will be less and vice versa. Customer satisfaction determines purchasing intent, thus customer satisfaction affects loyalty considering the value and image of the brand (Lai, et al, 2009).

On the basis of these findings, the following hypotheses were set up: Hypothesis 4: Brand satisfaction has a positive impact on brand value Hypothesis 5: Brand satisfaction has a positive impact on brand loyalty.

Brand value

Brand trust is expressed through the sense of acceptance of a particular brand, expressed through the psychological attachment of customers to the brand (Wirtz and Mattila, 2003), which will create a sense of belonging to the brand (Ha and Perks, 2005). This behavior is not affected by the actual use of this product, but by its understanding of the importance of this brand, and it is distinguished by adding greater value to this product. Sometimes the value of the brand is greater than the actual value that it receives using it.

The following hypothesis is based on this: Hypothesis 6: Perceived value of the brand has a positive impact on brand loyalty.

Brand loyalty

Loyalty can be defined as a mandatory re-purchase of a particular product in the future (Oliver, 1999). Customer loyalty can be measured by positive attitudes towards products, satisfaction, trust, and retention of the brand purchase regardless of the change in its price (Zohaib, 2014).

This research should show that brand image, brand satisfaction, and brand value positively influence loyalty to the brand. In addition, the significance of branding should be examined on the brand's value and loyalty.

Marketers use a variety of means to attract consumers attention, and visual aids like colours, graphics, font styles play an important role in the process. According to Jürgen Klarić (2020)an expert in Neuromarketing, 84.7% of customers agree that the color of a product is the primary reason for

making a purchase. They originate a powerful message in our mind, it is not about choosing colors at random, but to connect your brand according to the type of emotion you want to arouse in the consumer.

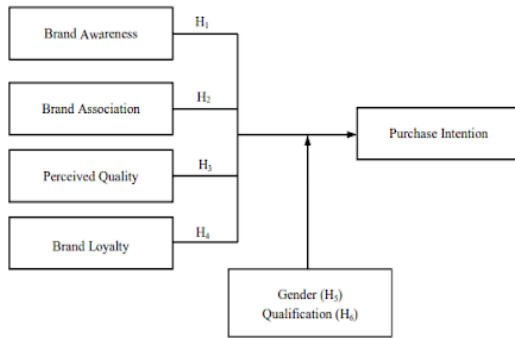
The human mind is "programmed" to react to certain types of colors, due to the perception of light suggested by the tone, in this way we can provoke different reactions in consumers in addition to having the possibility of transmitting certain types of corporate values associated with brands. (Tejada-Escobar et al., 2015)

While the eye recognizes different shades, the action of the brain waves changes, provoking chemical reactions in the hypothalamus(Páramo, 2016).

Keller (1993) depicts that when consumers completely know about the products and relates some strong association like product characteristics, brand name and price in their memory then brand equity builds. These brand associations are used for processing, organizing, and evaluating the information in the consumer's mind and take the purchase decision easily. Different factors like customer's own experience, price, brand image and marketing activities shape how consumers are perceived toward the brand (Yoo & Donthu, 2001; Zeithaml, 1988).

Farquhar (1989) stated that perceived quality is essential for developing a positive evaluation of a product or brand in a customer's memory. Porter (1974) argued purchase intention is people not only purchase a particular brand but also have shown a positive attitude to the brand category. Vinh and Huy (2016) found that perceived quality, brand association, and brand loyalty had positive effects on overall brand equity. But brand awareness had not shown a significant effect on overall brand equity.

Brand preference had a positive influence on purchase intention. Khan, Rahmani, Hoe and Chen (2015) confirmed that a causal relationship between brand equity dimensions and purchase intention was established. Perceived quality and brand loyalty had shown a significant influence on purchase intention. Naeini, Azali and Tamaddoni (2015) found that perceived quality had shown a significant effect on the creation of brand equity and brand equity had the highest effect on purchase intention. Naing and Chaipoopirutana (2014) declared positive and significant relationship was found among perceived quality, product image, consumer aspiration, emotional value, attitude towards product and purchase intention. Negative relation was found between consumer uncertainty and purchase intention.



We observed a positive correlation between ad attitude (and brand attitude) and pleasure, as well as dominance, suggesting that declared pleasure associated with the ad and perceived control, translates into a more favorable judgment of an ad and brand.(Urszula Garczarek-Bąk1 et al)

The brain is responsible for all our consumer behaviors. 80% of our brain energy is necessary to sustain our rest state, and only use about 20% of our brain consciously. We do not control the bulk of our attention since we are too busy scanning the environment for potential threats.(Daniel Kahneman)
As such, product placement, product design and colors used

In today’s world, we receive an average of 10,000 messages per day. This volume of data is largely irrelevant unless it speaks directly to the reptilian brain (Christophe Morin).

Authors	Objective	Findings
Read Montague (2004)	Identifying the causes of attention and	Different parts of the brain light up if people are aware or unaware of the brand they consume. The study suggested that a brand such as Coca-Cola has the power to “own” a piece of our frontal cortex, which is considered the seat of our executive function (EF) which manages our attention and controls our short-term memory, and planning.
Ohme et al. (2010)	Identifying the causes of approach/avoidance tendencies	Frontal asymmetry predicts approach/avoidance tendencies towards brand and product.
Pozharliev et al. (2019)	Establishing the differences in emotional values associated with luxury goods	Neural activity differs because of exposition to luxurious (vs. basic) brands which are associated with greater emotional value.
Krajbich and Rangel (2011)	Studying the effect of eye fixation time on buying	Items that were fixated on more were more likely to be chosen, which contributed to the quality of the choice process.

	decision	
Wang et al. (2016)	Studying the influence of video commercials on product preference	Frequency of exposure of branding products in video commercials influences the frontal delta and gamma rhythms associated with attention and perception. Single exposure leads to a high level of attention to the product, while multiple exposures may enhance preference for the product.
Smith et al. (2019)	Studying the effect of branding on children	Children are more aroused when presented with their favorite branded products compared to the same products without branding. Emotional responses to brands were similar to children's family and friends.
Chandon et al. (2002)	Studying the impact of brand familiarity on purchase decision	Brand recall was driven more by brand familiarity than actual attention paid to the brand at the moment of task choice
Chandon et al. (2009)	Studying the impact of shelf facings on buying decision	Consumer visual attention was driven by the number of shelf facings which translates into brand evaluation, respectively, for frequent users of the brand and for low market-share brands
Teixeira et al. (2010)	Studying the impact of different lengths/frequencies of brand exposure on consumer attention	Repetition of brand elements during short time intervals enhances attention to the brand and minimizes zapping, while long and uninterrupted brand exposition promotes zapping.
Urszula Garczarek et al (2021)	Studying pupil dilation on exposure to familiar and unfamiliar brands	Pupil size was larger for familiar brands, suggesting engagement of cognitive effort brings more brand association (while processing all of them, the cognitive load is greater).
Urszula Garczarek et al (2021)	Studying customer attention on exposure to unfamiliar brands	Higher number of fixation points measured for unfamiliar brands represent cognitive processes for unfamiliar advertisements. Higher EDA frequency peaks for unfamiliar brands, associated with emotional arousal to stimuli, may indicate stronger mental arousal while watching unknown brand commercials.
Wedel and Pieters (2000)	Studying the influence of visual elements on consumer attention	Brand element surface attracted more attention compared to pictorial and text elements which enhance brand memory.
Graham and Jeffery	Studied the relation	Participants looked longer at labels on products that they

(2012)	between eye fixation on buying decision	ultimately decided to purchase.
Underwood et al. (2001)	Studying the influence of visual elements on buying decision	Package pictures increased attention paid to the brand, but only for that nonfamiliar.
Moreno et al. (2018)	Studied the influence of colors, visuals, and pictures on buying decisions	Color ads are read 42% more than those written in black and white. Color in texts can improve reading comprehension by 73%, learning by 55-68%, and reading by 40%, 93% of consumers focus on the visual image, 84.7% of consumers say that color is the first reason why they buy a particular product.
Jalilvand, Samiei, and Mahdavinia (2011)	Studying the influence of brand awareness, familiarity on buying decision	It was found that brand awareness, brand association, brand loyalty, and perceived quality have a significant effect on consumers' intention to purchase automobiles.

Colour psychology is taken as a certainty when it comes to branding.

According to Satyendra Singh's 2006 study "Impact of color on marketing", almost 90% of the interactions between the product and the potential buyer are determined by the colour of the product.

When the eye perceives a color, it sends a signal to the hypothalamus, brain's area for endocrine functions. They are visual elements that mix, recall forms, words and stimulate memories.

Study #1: Store illumination and shopper response

An interesting 2016 study looked specifically at store lighting using an electroencephalogram (EEG), which recorded measurements of brain waves. EEGs provide researchers with a neurophysiological readout or response reflecting ongoing processes in large regions of the brain. Physiological reactions of purple illumination on apples were stronger than with red or yellow. They speculated it was due to the contrast between the colours, drawing more attention to the fruit.

Study #2: Blue lighting and post-stress relaxation

A small study of 12 people found that they de-stressed faster after exposure to blue light rather than white light, measured using a standard questionnaire as well as EEG readouts.

Study #3: Neurophysiological Responses to Packaging

This study was undertaken to determine whether different aspects of packaging (colour, text or images) influenced participants. 63 different combinations of colour, text and images were used to show to their 40 participants. Along with self-reported measures, eye-tracking and measured brain waves with EEG were used to determine attention and arousal.

Interestingly, they found that an orange background colour added to the packaging increased the dislike of a product.

Each color conveys a definite meaning in Marketing:

- Blue has a meaning of royalty and trust. It also makes people relaxed and calm. However, having too much blue color may bring a negative effect, bringing a feeling of depression. Skype, Facebook, IBM, PayPal, are examples. Blue is the ideal colour for the transport, medical, wellness and technology sectors.
- Black is the color of power, luxury, prestige, elegance. White, on the contrary, conveys purity, innocence and something good. It is not by chance that it is used by Dolce&gabbana, Gucci, Prada and many other fashion houses.
- Red brings a sense of power, energy, attention, and this color looks very attractive to women. Moreover, red brings a sense of urgency as it increases heart rate with some time.
- Green is a relaxing color. It brings a clearer vision to things and makes you get rid of a feeling of anxiety.
- Yellow brings optimism. It is a color of brightness and excitement. The same is about orange brands like Hertz, Shell and Stanley.
- Purple is a calm and powerful color that brings authority, feeling of wealth and elegance. Purple color also makes things unique.
- Multicolored palettes imply openness and diversity. Google, for example, pioneer of multiethnic and ethical reality. Microsoft, Ebay and Toys are other examples.
- Colors influence the way a potential customer perceives the “personality” of a product. A company producing sugar candies should not use yellow or green but rather red packs, a colour that many consumers perceive as sweet.
- Research suggests that the color red encourages buying, while blue navy seems to evoke care and attention to the budget and curb that impulse.

Thus, when planning a precise marketing strategy, it is important to know what feelings and reactions we want to elicit in our customers. Since many buyers make purchases unconsciously, it is important to choose colors that are in harmony with the characteristics of the product we are selling.

Research Methodology

The project was carried out in phases. The major approach was adopted have been explained below:

Secondary Research-The project began with secondary research from available material like research papers, interviews, documentaries, newsletters and industry journals, as a source of data and information in their research etc. to identify best practices, understanding strategy formulation, methods of implementation, impact assessment and overall market drivers.

Primary research - A social research was conducted at the ground level to understand the prevalence and popularity of neuromarketing techniques by local businesses, shops. Various techniques of sales promotion and neuropsychological methods and their respective effectiveness were assessed.

Questionnaire- A questionnaire was designed encompassing questions from the 4 elements of marketing mix-i.e., Price, Promotion, Place, and Product. The questions ranged from price sensitivity, promotional effectiveness to attribute preference, measured on a Likert Scale of scale 1 to 5, 1 being the lowest.

Survey- An online survey form was designed with a dynamic interface that oscillated between the brand elements (like color, fonts, music, etc) of the two brands under study. The form presented to the respondent was randomized. The form was embedded with a timer to record the time taken to complete the survey and time spent on each question. The form was embedded with Poissan Distribution

Quantitative research- The data collected from over 170 respondents was cleaned, and analysed to frame hypothesis and objectives. Responses from quantitative and close-ended questions was analysed using statistics, mathematical and computerized tools like MS Excel and IBM SPSS.

Hypothesis and Objectives

This chapter states the hypothesis and the main objectives of the present study which have been developed after thorough consideration of the factors that have an effect on consumer behavior. the statements that have been mentioned under hypothesis will be acting as a starting point for our research which will later be concluded as true or false based on the analysis of the data collected for the purpose of this study.

Statement of Research Hypothesis

H10 - There is no impact of packaging on buying decisions of the consumers.

H1a - There is direct impact of packaging on buying decisions made by the consumers.

H20 - Advertisements don't hold much importance when it comes to making buying decision.

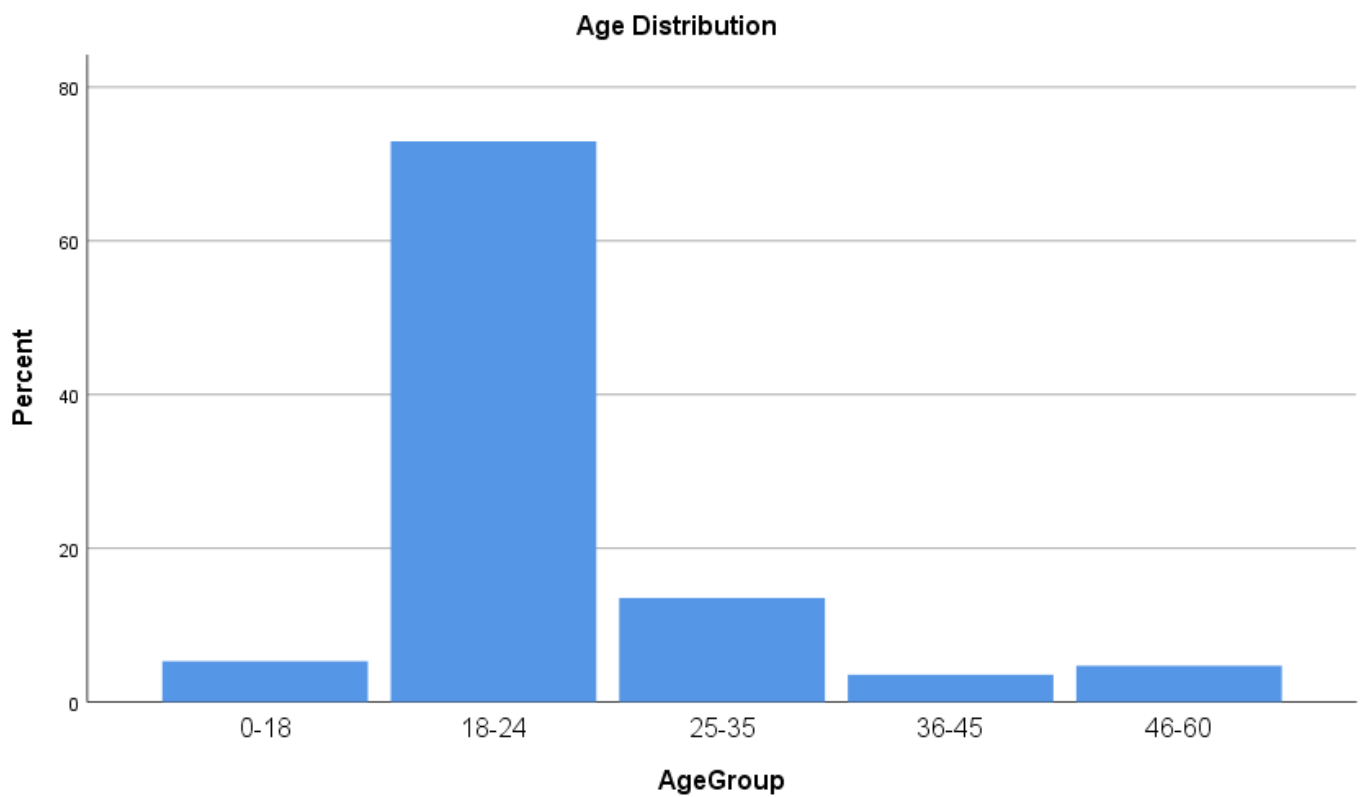
H2a - Advertisements hold importance when it comes to making buying decision.

Sample size and sampling technique

Sample size is extremely crucial for a survey to have an appropriate sample, one which fairly describes the entire population. Sample should be diversified and should neither be too large nor too small. It should be feasible and should not take much of our time or resources. Keeping in mind the objectives

of study and the kind of information we are collecting from people, a sample size of 170 is studied for the research.

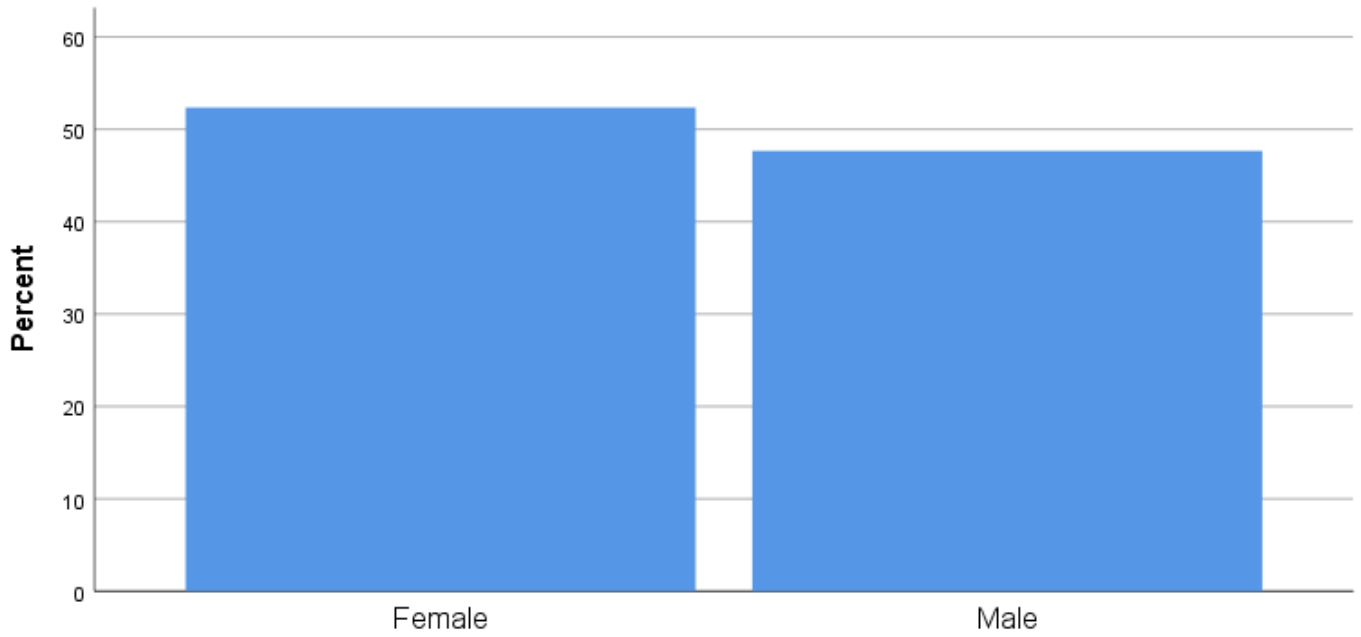
Profile of the respondents



Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	89	52.4	52.4	52.4
	Male	81	47.6	47.6	100.0
	Total	170	100.0	100.0	

Gender

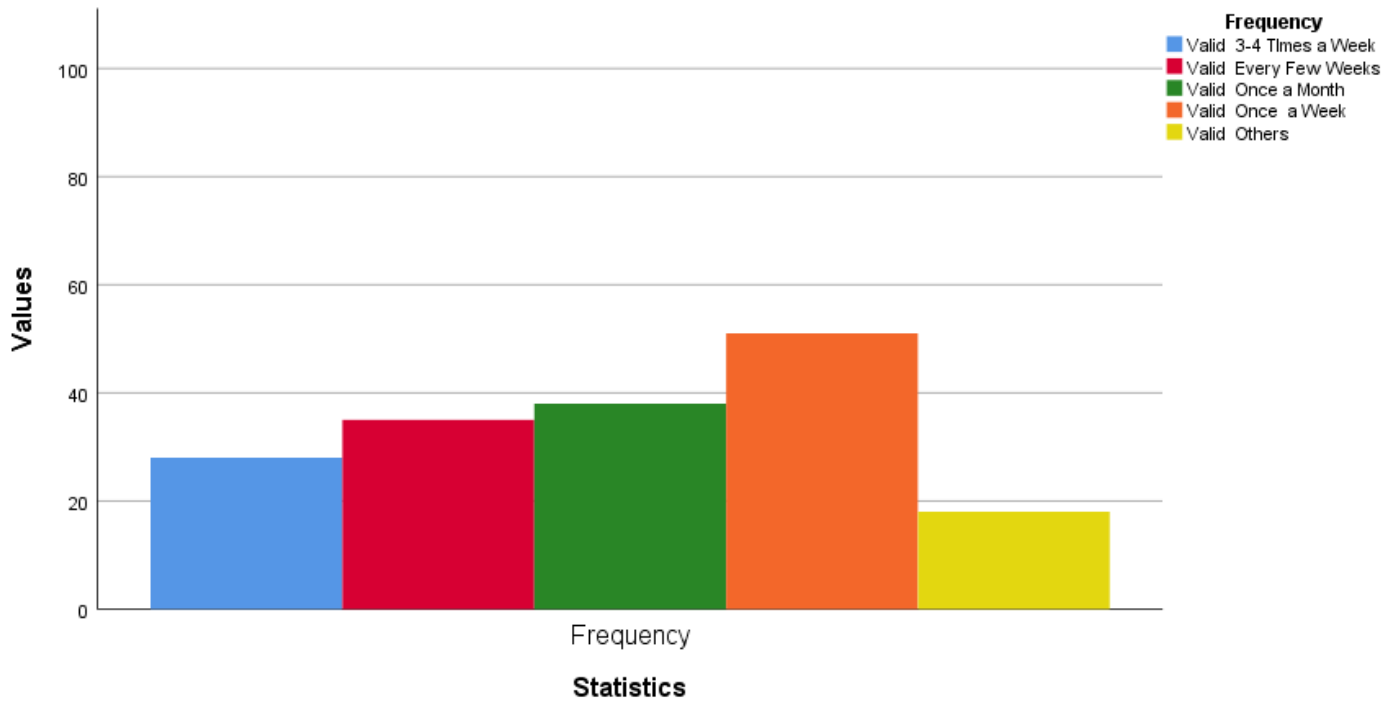


Gender

Frequency of Eating Chocolate

	Frequency	Percent	Valid Percent	Cumulative Percent
3-4 Times a Week	28	16.5	16.5	16.5
Every Few Weeks	35	20.6	20.6	37.1
Once a Month	38	22.4	22.4	59.4
Once a Week	51	30.0	30.0	89.4
Others	18	10.6	10.6	100.0
Total	170	100.0	100.0	

Frequency of Eating Chocolate



Hypothesis 1 Testing

There is no impact of packaging on buying decisions of the consumers.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
How Convinced With KitKat Ad	170	1	5	3.06	1.222
Valid N (listwise)	170				

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Design	170	3.01	1.339	.103

One-Sample Test

Test Value = 3.06

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Design	-.527	169	.599	-.054	-.26	.15

Correlations

		HowConvinced
How Convinced With KitKat Ad	Pearson Correlation	1
	N	170
Packet Colour	Pearson Correlation	-.138
	Sig. (2-tailed)	.074
	N	170
Font	Pearson Correlation	-.008
	Sig. (2-tailed)	.921
	N	170
Design	Pearson Correlation	-.004
	Sig. (2-tailed)	.960
	N	170

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
How Convinced with 5 Star Ad	170	1	5	3.02	1.354
Valid N (listwise)	170				

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Design of 5 Star	169	2.59	1.093	.084

One-Sample Test

Test Value = 3.06

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Design5Star	-5.568	168	.000	-.468	-.63	-.30

Correlations

		HowConvined5Star
How Convinced with 5 Star Ad	Pearson Correlation	1
	N	170
Packet Colour	Pearson Correlation	-.099
	Sig. (2-tailed)	.201
	N	170
Font	Pearson Correlation	-.059
	Sig. (2-tailed)	.443
	N	170
Design	Pearson Correlation	.000
	Sig. (2-tailed)	.999
	N	170

As per the data so collected, it is clearly evident that the respondents don't provide much importance to the packaging of the product and are very less affected by the way the product is being packed and designed for them. As per the correlation test run on the data all the three factors like Packet Colour, Font and Design of the packet show negative correlation or no correlation which means that these factors do not directly influence the buying behavior of the consumer. Instead, these factors have, although very minimal but negative correlation. Therefore, Hypothesis 10 is rejected and hypothesis 1a is accepted.

Hypothesis 2 testing

Advertisements don't hold much importance when it comes to making buying decision

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
How Convinced with 5 Star Ad	170	1	5	3.02	1.354
How Convinced With KitKat Ad	170	1	5	3.06	1.222
Valid N (listwise)	170				

Correlations

		HowConvinced
How Convinced with Kitkat Ad	Pearson Correlation	1
	N	170
Advertisement	Pearson Correlation	.076
	Sig. (2-tailed)	.330
	N	168
Kitkat Uniqueness	Pearson Correlation	.186
	Sig. (2-tailed)	.015
	N	170

Correlations

		HowConvined5Star
How Convinced with 5 Star Ad	Pearson Correlation	1
	N	170
FiveStar Advertisement	Pearson Correlation	.118
	Sig. (2-tailed)	.127
	N	169
5 Star Uniqueness	Pearson Correlation	.101
	Sig. (2-tailed)	.191
	N	169

As per the data so collected, it is clearly evident that the advertisements have a significant impact on the buying behavior of the consumers. As per the correlation test run on the data all the factors like advertisement and uniqueness show positive correlation which means that these factors directly influence the buying behavior of the consumer. Therefore, Hypothesis 20 is rejected and hypothesis 2a is accepted.

Conclusion

The research aimed to test the influence of marketing strategies of two brands of chocolate, covering the aspects of promotion and branding. While the correlation index does not point to any significant relation between packaging colour, font style, design and the ultimate buying decision; the higher number of respondents, who had received Kitkat themed forms, tending towards the Kitkat, cannot be overlooked. While the questionnaire relied on facts as were reported individually, thus prone to inherent bias and misreporting behaviors. On the other hand the form's design can be seen as a factor that subconsciously influences brand recall.

Thus, whilst colours, fonts, and label designs cannot be argued to shape consumer perception independently. But, when coupled with other tools, they indeed have a significant role in the overall promotional strategy of a brand. Thus, the paper also acknowledges the research gaps posed by traditional methods of reporting for evaluating neuromarketing techniques.

The study also finds that advertisements and brand campaigns highlighting product's uniqueness highly influential. Hence, the expanding sources of media available for advertising and promotion can be effectively tapped for a brand's growth.. New and emerging media channels like social media, video marketing offer wide reach, are cost effective and can be controlled and monitored with analytics unlike traditional media like television and print.

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QUESTIONNAIRE:

Neuro-Marketing_Survey Form

Page 1

Page 2

Page 3

Page 4

Page 5

Page 1



Name *

First Name

Last Name

Email *

Age Group *

Gender *

Occupation *

Do you eat a chocolate *

Yes

No

Next

1/5

Page 2



[Click Here](#) to see the ad

On a scale of 1 to 5, how convinced are you to buy Kitkat after watching this ad?



Back

Next

2/5

How often do you eat chocolates? *

How do you choose your chocolate?

What kind of chocolates do you prefer? *

Which colour appeals to you the most?



Red



Golden Purple

Which font do you think is more relaxing?

Chocolate *Chocolate*

1

2

How much money would you be willing to spend on a chocolate? *

-Select-



On a scale of 1 to 5, how likely are you to buy a chocolate if there is an ongoing discount or offer on it? *



Back

Next

3/5



[Click Here](#) to see the ad

On a scale of 1 to 5, how convinced are you to buy 5 star after watching this ad?



Back

Next

4/5



Rate the uniqueness of Kit Kat in the following product characteristics

	1	2	3	4	5
Red/Silver wrapping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Advertisement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taste	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rate the uniqueness of 5 Star in the following product characteristics

	1	2	3	4	5
Red/Silver wrapping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Advertisement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taste	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rank in order of taste

	1	2	3	4	5
Kitkat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5 Star	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dairy Milk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Milky Bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which of the taglines seem more familiar to you?

- Take a break Jo khaye kho jaye

Back

5/5