

Consumer color neuromarketing

Neuromarketing de los colores en el consumidor

Marcelo Patricio Obando Changuán*
Jorge Aníbal Loya Simbaña*

ABSTRACT

The influence of colors and Neuromarketing on purchasing preferences lies in the fact that the mind can associate colors by harboring them in thought as a memory. The objective is to demonstrate the impact of colors on consumers for purchase and to verify if they are attracted by the packaging and size or by the product. A review was made based on scientific data for a bibliographic and descriptive research, including students between 20 and 27 years old from ESPE. There were 30 respondents for consumer preferences with color selection and 50 respondents for the influence of color and product characteristics to make the purchase. The methodology was to show 24 images of 3 items in 3 colors and 10 neuromarketing questions for the preferred selection. The results indicate that colors influence the consumer to make the purchase, and, for 100%, size, color and appearance are important to be influenced to purchase unconsciously. In conclusion, the colors yellow, blue, red have an impact on the psychology and visual neuromarketing influence on the purchase decision. There is still a wide world to explore, because each person manages their emotions and impulses.

Keywords: Colors, Purchasing, Consumer, Influence, Neuromarketing, Influence

RESUMEN

La influencia de los colores y el Neuromarketing en preferencias de adquisición radica en que la mente puede asociar colores albergando en el pensamiento como un recuerdo. El objetivo es

* PhD, Universidad de las Fuerzas Armadas ESPE, Department of CEAC, Sangolquí, Ecuador, mpobando@espe.edu.ec , <https://orcid.org/0000-0001-5431-4310>

* MSc, Universidad Tecnológica Indoamérica, Faculty of Administrative and Economic Sciences, Quito, Ecuador, jorgeloya35@gmail.com , <https://orcid.org/0000-0003-0071-0793>

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demostrar el impacto de los colores en los consumidores para la compra y verificar si se sienten atraídos por el empaque y tamaño o por el producto. Se realizó revisiones con base a datos científicos para una investigación bibliográfica y descriptiva, incluyendo estudiantes entre 20 a 27 años de la ESPE. Participaron 30 para las preferencias de consumo con la selección de color y 50 encuestados para la influencia del color y características del producto para hacer la compra. La metodología radicó en mostrar 24 imágenes de 3 artículos en 3 colores y 10 preguntas de neuromarketing para la selección preferida. Los resultados indican que los colores influyen en el consumidor para efectuar la compra, y, para el 100% lo importante es el tamaño, color y apariencia para ser influenciado a adquirir inconscientemente. En conclusión, los colores amarillo, azul, rojo repercuten en la psicología y el neuromarketing visual influyen en la decisión de compra. Queda aún un amplio mundo por explorar, porque cada persona maneja sus emociones e impulsos.

Palabras clave: Colores, Compra, Consumidor, Influencia, Neuromarketing

INTRODUCTION

Since prehistoric times, human beings have seen the need to represent everything that surrounds them, this is how primitive men painted with their hands any type of figure, silhouette, etc., on the walls of caves; using materials such as reddish ocher and black color obtained with charcoal. (Palacios, 2020) This type of painting is known as cave art and a sample can be seen here. In the time of Aristotle in Ancient Greece, he expressed with his theory of "*the sense and the sensible*" that black and white contained a series of colors, which were: yellow, blue, purple, red and green. (Vicente, 2014) At the time of the Renaissance, Roberto Grosseteste published his work "*De Colore*", where he studies the metaphysics of light as something that God gave to the Earth. (Arbeláez, 2019)

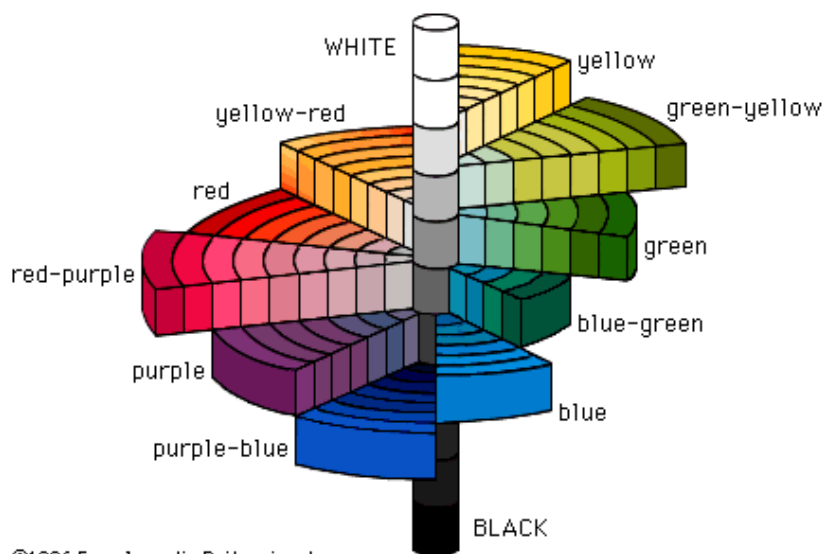
Later, Leon Alberti established the existence of four primary colors (red, blue, green and yellow), after the publication of his book "*De Pictura*" in 1436. This theory was complemented by that of Leonardo Da Vinci, in which he expressed that black and white were the extremes of the color range. (Grace, 2019)

In the Middle Ages, the most used colors, mostly in clothing, were green and red. Red was the most used by Popes and Cardinals for the making of their vestments, while it was associated with demons and hell. Yellow, on the other hand, was seen as a sign of identification of traitors within society. And gray was associated with poverty and filth. (Sas van Damme, 2013)

Going into the nineteenth century, we find Isaac Newton, who decomposes the colors through the refraction of light and various scientific methods, obtaining the chromatic

circle. In addition to the research of Thomas Young in relation to the human eye, where he presents his theory "*Trichromatic vision*", in which he explains that the human eye has three receptors sensitive to blue, red and green. (Magaña, 2018). In 1810, Johann Goethe published his famous book "*Theory of Colors*", in which he states that the perception of objects is affected by psychological and physiological factors. (Taboada, 2015) For the year 1915, Albert Munsell appears presenting his work "color tree", which, instead of sphere, Munsell created a "tree" in which the colors were distributed by branches in order of saturation or purity, and where the branches can be of different lengths, exemplifying, the branch of yellow is quite extensive, and orange, considerably shorter. (Abreu, 2017) It is here where emotions begin to be related to colors, in a sense of spirituality and calmness. Munsell's color tree can be seen in Figure 1.

Figure 1. Munsell tree



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Source: (Britannica, 2018)

Color has become the most creative and fun way we humans have to express our emotions or feelings. It is still not known exactly what is the scientific connection that our neurons have with different shades, in relation to like it or not. However, a study carried out by researchers Stoughton & Conway (2008) of Wellesley College, in relation to the effect that colors cause in our neurons, explains how different pigments activate certain parts of our brain in particular. Thus it is seen how blue, red and green tones stimulate our brain a lot. Something else that the study emphasizes is the use of the aforementioned colors in advertising designs and how they capture the consumer's attention to a great extent.

Some data collected from different pages on neuromarketing show that: 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. (Moreno et al., 2018) Nowadays, color is no longer just a tool to decorate pamphlets, billboards or any type of promotional material; now a correct manipulation of colors can enhance brands and make them stand out in the consumer's mind. During the chronicle of the human race, different conceptions of colors have been granted; agents such as social culture and the psychological reactions they provoke in our subconscious, have influenced the concepts of each pigment, so we see how some mean life, joy and happiness, others death, sadness and depression. Table I shows the most used colors in marketing with their psychological interpretation, symbolism, the effect or perception they produce and their use.

Table I. Most Used Colors in Marketing

Color	Psychological interpretation	Symbolism	Effect Perception	The use provides	
Red	Energy, vitality, warmth, rebelliousness, blood	courage, health, power,	Warmth, love, passion, strength, violence, fire,	Courage, bravery, warmth, desire, passion, excitement, attraction, dynamism,	Intensifier of the body's metabolism with effervescence and passion. Supports overcoming depression
Orange	Creativity, sacred, happiness, humbleness, stimulation	warm, family, health,	Energy, vibrant, youthful, fresh	Enthusiasm, success, youthful, creative, cheerfulness	Increases immunity and potency
Yellow	energy, bright, cowardice, dangerous	encouraging, optimism, hope, weak,	Happiness, entertainment, electricity, smart	Optimistic, cheerful, happiness, stimulating, energetic	Helps mental stimulation or clears it up
Green	Harmony, money, wealth, calmness, confidence	life, hope, health, serenity,	Vitality, abundance, wealth, prestige, traditional, balanced, ecology, growth	Tranquility, natural, healthy, exuberance, fertility and freshness, inexperienced, jealousy	Levels emotions. Strengthens the spirit. Promotes compassion.
Blue	Stability, quiet, confidence, depressed	progress, calmness, security,	Loyalty, trust, depression, sadness,	Reliability, faithfulness, sincerity, calmness, peace, responsibility,	Calms the mind, dispels fears

				sadness, depression	
Violet	Royal, prestigious, luxurious, mysterious, feminine, serenity	Power, nobility, mystery, femininity		Luxurious, ambition, independence, feminine, nostalgic	Beneficial for mental and nervous disorders.
Black	Power, glamour, luxury, fear, death, mystery	elegance, serenity, formality, respect, sadness, silence		Formal, elegant, sadness, sophisticated, serious	It projects objectivity and functionality.
White	Peace, purity, kindness, innocence, tranquility, optimism.	Purity, cleanliness, humility, virtue, simplicity, transparency		Freshness, clean, direct, simple, pure, honest, sincere, healthy, virginity and perfection.	It purifies the mind by raising the levels.
Coffee	Stability, dirt, dirtiness, laziness	Protection, dirt, ceramic, natural, tree trunk, tree trunk		Safety, durable	Warmth and naturalness
Lavender	Calm and tranquility	Balance, peace, serenity		Youth and vitality	Stimulates spiritual healing.
Silver	Wealth, money, success, coldness, arrogance.	Stability, peace, tenacity		Balance, tenacity.	Prevents ailments and diseases.
Gray	Equilibrium, order, boredom and old age	Independence, self-control, Intelligence, encouraging, success		Elegance, respectful, conservative and formal; temperamental and balanced, boring	Infuses creativity.
Gold	Power, wealth, abundance	Sun, abundance, strength		Prestige, honor, prosperity	Strengthens the human body and spirit
Indigo	Concentration and planning	Wisdom, truth, order		Conformity, introspection	Clears the path to spiritual self-realization

Source: Adapted from (Leyva, 2018) (Casas & Chinoperekweyi, 2019)

Today the influence of brands on consumers is somewhat overwhelming. In our mind we can associate them with certain colors and different shapes, as if it were a memory, they manage to lodge in our thoughts. That's why brands nowadays want to be part of our lives, introduced in our subconscious, linking with emotions, feelings, and perceptions. Forming, not only a commercial image, but one of trust and appreciation, and this is where *Neuromarketing* makes its appearance. In the past there was no answer

to the question of why some brands were better received by the public than others, whether it was simply luck or an excellent sales strategy. Now it can be said, with certainty, that neuropsychological factors play a very important role in the consumers' decision to purchase a certain good or service.

Neuromarketing is based on neuroscience and research methodologies, as well as brain patterns and behaviors evident in people. The latest neuroscience research has shown that customers' actions derive from a combination of biblical-emotional factors (fear, anger, joy, sadness) and irrational factors, since the tendency to buy a certain product is affected by non-conscious forces; for example: the environment, mood, social context, etc. This means that customers do not logically examine the attributes and benefits of products or services in order to purchase them.

However, the human brain can relate convergent and divergent thinking, the logical and the emotional, make them act together, for decision making. Even so, we must give greater importance to the emotional part of the consumer, since it is the one that causes the brand to remain immersed within the subconscious. This is why many companies have opted to use *neuroimaging* techniques, since they can predict the overall success of the brand. The opinion of consumers about a certain good or service, takes part in the positioning or not of the same in the market, before or after its launching. (Canal, 2018) It is now when brands must find a way to build customer loyalty, focusing on their emotions, generating positive and persuasive experiences; the most effective so far is color. Many marketing experts know that, in order to enhance a brand, the use of colors is a fundamental part of its growth and impact on consumers. Colors communicate special sensations to us, 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.

Specialists in color Neuromarketing assure that 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)

According to studies, color combinations can have a direct influence on blood pressure, generating stimulating or relaxing effects on the person. In experiments carried out with prisoners, by painting the cells with pastel colors, they were able to verify that anger and anxiety were appeased. While the eye recognizes different shades, the action of the brain waves changes, provoking chemical reactions in the hypothalamus. (Páramo, 2016) Thus we find that colors such as white symbolize purity, yellow fun, orange is related to joy, red is associated with courage, pink is linked to gentleness, green is linked to vitality, and so on.

People decide about the product 62 to 90 % based solely on colors and it affects the mood and feelings creating an attitude towards a certain product, so marketing should

know the importance of colors and create their products or packaging accordingly; as well as the colors of their brands and products to attract a multitude of customers. (Khattak et al., 2018). A sample of color management in brands can be seen in figure 2.

Figure 2. Examples of Colors in the Marks



Source: Adapted from (Pinterest, 2022)

MATERIALS AND METHODS

The methodological design proposed in the Calasanz Observatory Magazine "*Influence of color on consumer preferences*" was applied. (Álvarez, 2011). The exercise consisted in indicating, by means of a Samsung J7 cell phone, 24 sheets of images in categories of 3 packaging and product containers in 3 different colors arbitrarily ordered so that they could select the one they thought was the preferred alternative. All participants were given the same time and conditions for its application, taking into account that there was no external activity that would affect their response, and it was even indicated that there is no "correct" response pattern, since the study only seeks to evaluate individual consumption preferences according to their selection. (Álvarez, 2011)

A survey was also applied with 10 questions which deal with how neuromarketing influences them, the color and characteristics of a product in the consumer to subsequently make the purchase, through questions such as: Do you think that when purchasing a product is important the color, the color of the products encourages you in some way to buy them, etc.. With the purpose of collecting information from the consumer, for which there was no pattern of correct answers.

The study gathered the opinions of students of the University of the Armed Forces "ESPE" who were between 20 and 27 years old, with low, medium and high socioeconomic levels, with common demographic and pictographic characteristics. All are inhabitants of the Valle de los Chillos zone and surrounding areas, province of Pichincha. The methodology on the influence of color was applied to 30 people (15 men and 15 women) and 50 people were surveyed to determine how color and characteristics influence purchasing decisions.

RESULTS

Table 2 shows the questions asked in the surveys.

Table 2. Questions asked in the Surveys

Questions	Yes	No
When buying a product, is the color closely related to your emotions?	100.0%	0.0%
At the time of purchase do you look at the colors of the product?	100.0%	0.0%
Do you think that the shape and size of the product influences when making a purchase?	89.9%	11.1%
Do you believe that the color of the products is an incentive to purchase them?	50.0%	50.0%
Do you think that color is important when purchasing a new product?	25.0%	75.0%
Do you think the color of the product is more important?	77,8%	22,2%
Do you think that more important is the color of the wrapper	22,2%	77,8%

Source: Own research

From the information we have:

100% believe that characteristics such as color, packaging and size directly influence consumers and are closely related to their emotions. 100% of the people surveyed affirmed that at the time of purchase the most important thing is the size, color, appearance, ergonomics of the product, which, beyond being a feature, is what makes the customer be influenced and encouraged to purchase the product even without being necessary.

50% of the respondents stated that when purchasing a product they always pay attention to its color, 25% of the respondents stated that the packaging and appearance of the product is important at the time of purchase, 75% of the respondents thought that the appearance and appearance influences the consumer in a certain way but that it is not essential.

The results achieved in the research carried out indicate that the majority opted for colors such as yellow, blue, red colors that go according to their personality; on the other hand, the direct behavior of the consumer with the product and the variability of preferences in terms of factors such as colors directly affect the consumer. Respondents indicated that in reality most of the time they are attracted to a product because of its characteristics, color often influences when making a purchase, but there is a big difference between buying on impulse and necessity. Ambient music influences the behavior of buyers in an emotional and satisfactory way, in advertising of new products music is an important ally, the human brain quickly captures what it hears, observes, perceives and feels, buyers will feel calm this will give more sales volume or on the contrary will feel annoyed with changes in musical style depends on the customer profile". (Malo, 2016) The above paragraph, talks about the influence of music on the buyer, how the interaction of repetitive sounds work unconsciously in the consumer's brain, encouraging in him the practice of consumption. Currently the customer is becoming more demanding, being necessary that companies seek ways to attract the attention of buyers and maximize their sales by offering not only a product or service but also a shopping experience. Therefore, through their research they show that music influences not only emotions, but also consumer behavior, implying that auditory neuromarketing is more important than visual neuromarketing and the influence of colors.

Once new products are promoted, it is crucial to consider that consumers place the visual aspect and color above other factors such as sound, smell and texture. Thus, brands deploy their tactics based on conquering emotionally and in the senses to achieve that their product or service is chosen by consumers and thus achieve customer loyalty for the longest possible period of time, using tools such as those provided by neuromarketing to understand the tastes of potential customers.

Although the color and characteristics of a product influence the consumer's decision making, there is still a wide world to explore within the human being because each person has his or her own way of handling emotions and impulses.

CONCLUSIONS

Within this research work we have tried to define how important is the influence of colors and neuromarketing in sales, obtaining that most of the people opted for colors like yellow, blue, red, colors that go according to their personality, being these colors those that have a huge impact on our psychology and our choice of purchase; However, visual neuromarketing is the one that most influences buyer behavior, as respondents

stated that they believe that color, packaging and size influence their purchase decision. Regarding the size and shape of a product, there is a great difference in preferences between men and women, and a small percentage are similar.

It was also determined that neuromarketing and the influence of colors is very useful since it has been verified that consumer decisions are made unconsciously, driven by emotions. It should be noted that there are several factors that influence how and what consumers buy. However, an important part of these decisions remain influenced by visual cues, with color being the strongest and most persuasive.

No matter how isolated a person may be, there is a certain amount of attraction to the striking appearance of a product. Technology in a globalized universe is indispensable to implement strategies through neuromarketing that, despite being costly, the results are almost always effective.

For companies it is important to use neuromarketing as a market research tool because it allows them to know what reaction consumers have in their brain, emotional and instinctive part against the product or service they are offering and the way they are communicating it, in order to create marketing campaigns, advertising and communication, which increase the percentage of success in the marketing of products thus generating more profitability for their companies. Nowadays, customers are becoming more and more demanding, so even though neuromarketing is a great tool, it is not enough to completely attract the attention of buyers, so music is the perfect ally to increase and maximize the sales of a product or service.

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