

The Power of Color: Psychological and Marketing Effects of Color in Consumer Decision-Making

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Abstract: This literature review draws attention to the significance of color usage and demonstrates that color psychology is an indispensable component of the marketing communication toolkit. It examines the role of color in decision making through consumers' color associations and color symbolism. Color associations, color psychology, and color marketing are becoming increasingly relevant in the corporate sphere. Although the persuasive power of colors has been well documented, only a limited number of companies have incorporated these research findings into their practical operations to date. This paper was written to promote the conscious and strategic use of color. Its objective is to provide readers with a clear understanding of the psychological and physiological effects of colors, their significance, and the impact of their application in marketing communication. The findings of this research clearly indicate that linking color associations to products through packaging and corporate identity elements exerts a stimulating effect on purchase decisions. The emotional influence of colors is substantial, and as a result, consumer expectations and overall customer experience can be enhanced. Based on these conclusions, further research in the fields of color marketing and color psychology is recommended, particularly with regard to the color associations of Generation Z. As digital natives, members of this cohort encounter visually saturated environments on a daily basis; their responses to and associations with colors differ from the generalizable patterns. As the consumers of the future, understanding this generation's reactions to colors is essential for developing effective branding and packaging strategies.

Keywords: Color psychology, Color marketing, Color associations, Color symbolism, Consumer decision making, Consumer behaviour

1 Introduction

The use of color is an indispensable and central element of marketing communication. Purchasing decisions are significantly influenced by consumer

associations originating from a product's visual elements, and colors have a particularly strong impact on these associations [1]. Color psychology is therefore an area worthy of active research, as it can influence purchasing behavior through marketing tools, particularly with regard to impulse buying. Consumers form an opinion about a product in less than two minutes, and this decision is overwhelmingly influenced by colors [2].

The power of color marketing is becoming increasingly apparent to companies as well, yet many firms remain unaware of the power and significance of colors and do not incorporate the application of marketing psychology through colors into their practices. This decision is often not even a conscious one, as graphic designers and design professionals frequently rely on their intuition rather than basing color schemes on color psychology research [3]. The aim of this secondary research is to draw attention to the aforementioned problem and to encourage companies to consciously apply color psychology and color marketing.

2 The Effect of Colors

Colors have a special effect on people, even if we don't notice it in our everyday lives. Visual stimuli, especially colors, play a significant role in forming quick impressions and, in many cases, unconsciously influence consumers' attitudes and behavior [4]. We associate different moods, emotions, experiences, or knowledge with certain colors. When we recall these upon perceiving colors, we are making associations; we link our thoughts to shades and colors based on our memories.

Color association is a spontaneous and only very rarely conscious activity, yet it plays an important role in people's lives. Colors can be easily associated with objects, emotions, and events, but beyond these, we can also link colors to various sounds and melodies, types of materials, and scents or tastes. Although the meanings of colors may be culturally determined, certain associations appear in broadly similar ways across different societies [4]. Thus, the vast majority of people associate the same mental concepts with certain colors everywhere in the world. Examples include red for blood, blue for the sky, green for plants, or brown for the earth. This presumably developed during phylogenetic and ontogenetic evolution, based on experience [5].

Color associations generally direct people's thoughts toward the most common form in which a color is seen. Just because green is not only the color of nature but also the color of an object, people will not associate it with that object unless it has had a significant impact on them during their lives. We easily abstract from the colors of everyday objects when the selected colors have a much more significant and dominant presence in our environment [5]. We also associate various meanings linked to the meanings associated with individual colors with that particular color,

thus forming different chains of associations related to colors. These meanings are secondary, and fewer people perceive them as carrying that specific meaning, yet they still have a significant influence on our way of thinking.

Let us examine, for example, the more complex perceptions associated with the color blue. As I mentioned earlier, this color is almost universally linked to the sky. If we follow this line of thought further, we can also associate the sky with distance and inaccessibility, which we can then connect to God or the gods. A more complex association, therefore, is that blue is the color of the gods and of religion, which carries within it the meanings of purity and sublimity, thus becoming the color of knowledge and reliability as well. These chains of color associations, which apply to every color, play a very important role in the selection of colors. The practical application of knowledge about color associations is realized through the use of color codes and color symbols, which over time can become ingrained in people's minds and serve as carriers of the symbols' general meanings [5].

Color symbolism is a phenomenon that has developed over a long period of time, largely based on cultural conventions, and creates a connection between a specific concept and a particular color. This association is not random; it carries a deeper meaning shaped by the specific cultural and social context. Thus, colors form a kind of language through which emotions, meanings, and messages can be conveyed to individuals or groups who know and understand this color symbolism. Therefore, in addition to color associations, the culture of a given people also has a significant influence on color symbolism [6].

2.1 The Meaning of Colors

Different colors have different meanings that have evolved over the years. The general, international meanings of colors are an important consideration in color marketing. However, it is also important to take different cultures into account, as the meanings associated with colors can vary in different parts of the world. Yet most associations with colors have biological origins. These archetypal colors, which can be traced back to early humans, carry meanings rooted in instinct, as early humans recognized through colors which ones to avoid and which ones offered them safety. If we consider only the informative meaning of colors, subjective opinions can be ruled out; however, it is precisely because of this subjectivity that it is difficult to break colors down into unambiguous meanings, since everyone's own experiences influence their attitude toward colors [7].

Due to our biological makeup, humans tend to pay more attention to brighter colors, as plants and animals with these colors were often poisonous. Red, because of fire, conveys both warmth and danger, while green is the color of nature. Red fruits are much more popular than green ones, as we subconsciously associate the color with ripeness and sweetness, while green is a sign of unripeness [8].

Society has assigned meanings to numerous colors, which have retained these connotations to this day. These include, among others, pink and blue, which are the colors associated with girls and boys, especially in Western culture. This is already quite widespread, but there are still colors that carry different meanings across cultures, and in many cases, they convey completely opposite messages.

Red is also one of these colors; in China, red symbolizes good luck, whereas in Africa, it signifies mourning. In most countries, however, the color of mourning is black, while in East Asia, white carries the same meaning. In America, green is associated with money, since the dollar is green, but in Ireland it is the color of St. Patrick, the country's patron saint, while in Central European cultures, people tend to associate it with nature. Americans associate envy with money, so its color is also green, while in Central Europe this emotion is identified with the color yellow [1].

As I mentioned earlier, these days pink or red is the color for girls, and blue is for boys. However, this was not always the case. Based on Jeanne Maglaty's research, an article from 1918 (Earnshaw's Infants' Department; Earnshaw's Infants' Department) stated that pink, due to its vibrancy and because it carries more strength, is the color for boys, while blue is a much gentler and more delicate color, and thus belongs to girls [9]. This clearly shows that the meanings of colors can and do change over time. As a society's culture evolves, people's attitudes toward colors shift, and the meanings of colors change for them.

Color	General meanings	Culturally different meanings	Biological/archetypal origin
Red	Excitement, strength, activity, alertness, modernity	Good luck (China) Mourning (Africa) The color of girls (Western)	Fire: warmth and danger Ripe fruit: sweet Stimulating effect
Green	Life, nature, peace	Money (USA) Envy (USA) St. Patrick (Ireland) Nature (Central Europe)	Nature: harmony Unripe fruit
Yellow	Cheerfulness, optimism, friendliness	Envy (Central Europe)	Eye-catching
Blue	Trust, intelligence, expertise, logic	The color of boys (Western)	Used to be the color of girls: tenderness, delicacy

			Sky: stability, security
Pink	Openness, thoughtfulness, charm, femininity	The color of girls (Western)	Used to be the color of boys: strength (because it was vibrant)
Black	Elegance, wealth, opulence, dignity	Mourning (in general)	
White	Cleanliness, hygiene, light, peace	Mourning (East Asia)	

Table 1
Meaning of Colors (Source: Own elaboration)

The role of colors in marketing is of paramount importance, as they have a psychological impact on people's decisions. Certain colors influence consumers' minds in ways that either motivate or deter them in their purchasing decisions. Major companies are able to influence their customers simply by choosing the right colors [10].

The activating power of colors was already considered proven as early as the 1980s. In 1981, Küller published a book summarizing his experiments demonstrating the effects of colors. In 1976, for example, he conducted an experiment in which he placed six women and six men in color-rich and gray rooms for three hours each. Based on hourly measurements, it can be concluded that too much color can even negatively influence people's behavior, as the subjects, due to the chaotic visual impact and a lack of emotional control, behaved in a more withdrawn and reserved manner [11]. Therefore, it is advisable to use colors very carefully.

It is a proven fact that colors have a physical effect on the human eye: muscles contract and tense, and the pupil dilates or constricts when looking at certain colors. Psychological experiments have also demonstrated that colors can be used to facilitate powerful subconscious communication. If the visual presentation does not satisfy the consumer's aesthetic sensibilities—that is, if they encounter particularly disappointing color combinations—it can evoke negative emotions in them [12].

3 An overview of the practical application of colors

“The sight of certain colors makes us happier, more creative, hungrier, or more irritable, and this is nothing other than the emotional impact of colors.” [13]

Valdez and Mehrabian stated thirty years ago that colors have the power to influence emotions. Based on their 1994 research, it can be said that the brightness and

saturation of colors have a strong and predictable relationship with emotional reactions, meaning that certain colors can influence our emotions [14].

In addition to all this, colors also have an influence on human nature and behavior. In 2000, the color of street lighting in Glasgow was changed from warm yellow to blue to match the surrounding scenery. After this change, crime rates in these areas decreased. The same effect was observed in Japan when the lighting was switched to blue, and when the Keihin Electric Express Railway Company also switched its train lights to blue, the suicide rate decreased. This is attributed to the fact that people were much more cautious due to the unfamiliar lights. Moreover, since blue is the color of police lights, the illuminated area was perceived as a more strictly guarded zone, indicating that this association was made among residents.

In addition, the color blue can have a calming effect on people, since red and yellow—warmer colors—also signal danger. Blue light is also said to improve the condition of patients suffering from seasonal depression; a study on the effects of street lighting published in the journal *Trials* was medically reviewed by the Scientific Advisory Board in 2008. Of course, it would be reckless to claim that blue light alone cures people struggling with winter depression, but it is a fact that color therapy is used to treat seasonal affective disorder (SAD) [15].

In today's world, a surprising number of marketing companies seek to influence people through colors and color schemes, as colors can not only elicit emotional responses but also affect product perception, quality assessment, and purchasing decisions [4].

3.1 The appearance of colors in audiovisual content

Different shades and hues thus influence consumers' emotions, moods, and how they experience things, and this plays a major role in filmmaking as well. Lewis Bond's video, published on the Criswell YouTube channel in 2015, provides an excellent summary of the relationship between colors and films. This video served as the basis for numerous subsequent studies. I am drawing on the compilation by Mark Risk, which he created with the help of StudioBinder [16]. Risk's article demonstrates the effects that the color palettes of various films have on viewers.

Colors, as well as their brightness and shades, greatly determine a film's mood. Frequently used colors can trigger various emotional, psychological, and even physical responses in people. For example, the color red, if vivid enough, can raise blood pressure in certain scenes. These effects are often imperceptible to viewers, who are generally unaware of the psychological influence of colors [16].

Some films are covered with a distinctive color filter for nearly their entire runtime, thereby shaping the audience's perception of the film. If we take well-known films as an example, *The Matrix* (1999) wears a green "veil" throughout its runtime, so everything in the film is tinted with a slight greenish hue. I believe that this color

grading, in addition to making the film more mysterious and a bit more serious, is also intended to subtly implant digital elements—programming and computers—into people’s consciousness throughout the film, so that we feel as though we ourselves are part of a program.

In addition to *The Matrix*, color filtering throughout the entire film appears in other well-known movies as well. *The Twilight* (2008), popular among teenagers, also has a bluish tint, presumably intended to evoke a sense of coldness in the viewer, to showcase the characteristic weather of the city featured in the film, and to highlight the supernatural theme.

There are films that do not establish their overall mood by applying a single filter, but rather by excluding certain colors and working within a specific color scheme. An extreme example of such films is when the film itself is black-and-white and features only a single color, thereby evoking specific emotions in the viewer, which the chosen color further reinforces alongside the story. For example, in the 1924 film *Greed*, expressive elements within the film frames were hand-painted yellow. At the beginning of the film, only money was highlighted with the color, but as the frames progressed, yellow appeared more and more frequently, and by the end of the film, the entire image appeared in yellow. With this, the director sought to illustrate greed and how this trait consumes the protagonist, as the film’s title itself signifies: greed [17].

It may also be the case that in a given film, one color takes on a more significant role and meaning than the others, but every color appears on screen. If we focus on red, which is one of the most defining primary colors, it can mean different things in different contexts. Red is generally associated with the strongest human emotions, such as love, desire, or anger. Its appearance can represent warmth, passion, and sexuality, but it often carries negative connotations, such as violence, danger, or aggression [18]. In the film *The Sixth Sense* (1999), the color red symbolizes fear, dread, and foreboding, while the film *Pleasantville* (1998) uses red to express hope, love, and sensuality. Because the color red evokes intense emotions in the viewer, it should be incorporated into a film’s color palette with care and deliberation [16].

All in all, it can be said that when we watch a story on screen, colors trigger psychological reactions in us. They can direct our attention to important details, set the mood of the film, depict certain characteristics of the characters, and also represent changes or continuity within the story [16].

3.2 The Effect of Color Use on Purchasing Behavior

Colors are playing an increasingly important role in people’s lives, so marketing must pay special attention to them. Eighty percent of impulse purchases are influenced by colors. This means that a consumer is more likely to purchase certain products if they like their colors and find them appealing. Different colors evoke

different reactions in consumers, so companies looking to break into the market must choose them wisely [19].

3.2.1 Packaging

We might decide not to buy a product that's perfect for us in a store because the colors of the packaging don't accurately reflect the product's nature. For some manufacturers, misleading consumers with colors might attract customers, but at the same time, it can drive potential buyers away from the products that are best suited for them. Every shopper automatically forms a mental image of the product or service as soon as they see the packaging or advertisement. Colors and color combinations play a major role in this, as different emotions are associated with each color, most of which are subjective and easily generalized.

When shopping, our environment subconsciously influences our psychological reactions: the packaging of products, advertisements, and the colors of various lights. A great deal of research has been conducted on this topic worldwide, but I am examining the work of a Hungarian researcher. Füredi wrote in an article that, on average, 93% of our purchases depend on how the product looks, and 85% on the color of its packaging. It takes just a minute and a half to form an opinion about a store or a product, which influences our attitude toward shopping. Color psychology plays a very important role in our daily lives, even if we don't realize it [2].

3.2.2 Branding

Beyond packaging, colors and shades play a crucial role in many areas. The color of the logo, the colors used on business cards, and the consistency of the website's color scheme are all essential to a business owner's success. In addition, the colors used by social media professionals, the color palette of emails and company presentations, as well as the colors of flyers, posters, and online ads – that is, the colors used in the company's brand identity – all contribute to the perception of the product or service. Based on the colors displayed, customers categorize products; therefore, if these are not all in harmony, potential consumers cannot form a sophisticated mental image of the company [1].

As noted in a 2012 issue of the *Journal of the Academy of Marketing Science*, colors and shades play a significant role in brand building. Different colors convey different meanings to consumers and potential customers, as demonstrated by the research of Lauren Labrecque and George Milne [20]. When building a brand, it is important to ensure that its colors convey sincerity, for which shades of white, yellow, and pink are recommended. White is the color of purity, hygiene, brightness, peace, and, in some cases, happiness; people associate yellow with cheerfulness, honesty, optimism, and friendship; while pink is the color of openness, honesty, care, warmth, and tenderness. According to the results of a study

featured in the journal, conducted by Labrecque and Milne with high school students, yellow only partially conveys sincerity to people when used in logos and brands, whereas white and pink confirmed the hypothesis.

Shades of red, orange, and yellow can be used to convey a brand's excitement and uniqueness. Red is the color most closely associated with excitement, but it also signifies strength, activity, alertness, and has a stimulating effect, as well as conveying modernity. Orange also conveys excitement, but less intensely than red. Its use results in a lively, energetic appearance and symbolizes openness and community. Research supported the hypothesis regarding the color red, but the association that orange is an exciting color is only partially true, and the color yellow did not yield any positive results at all.

Expertise and intelligence can be represented by shades of blue and brown when defining a brand's color scheme. Blue represents trust, communication, intelligence, expertise, and logic; it is considered one of the safest colors on the color spectrum. Brown, on the other hand, conveys seriousness, reliability, and support. According to the survey, high school students did not associate brown with expertise, whereas blue corresponded to the hypothesis.

We can convey sophistication and refinement through the use of black, purple, and perhaps pink. Black conveys taste and charm and plays an important role in the fashion world: it is an expression of status, elegance, wealth, and dignity—just think of black suits, evening gowns, or limousines, and the color black is sure to come to mind for most of us. In addition, purple is a symbol of luxury, authenticity, and quality, likely due to the role the color has played throughout history, as burgundy and purple were both considered royal colors. Pink is also considered a sophisticated, feminine, and charming color. Among the study participants, black, purple, and pink did indeed convey an impression of sophistication.

The colors brown and green can be used to convey vitality and a strong, rugged brand image. Brown is associated with vitality because of its connotations of seriousness, nature, and the earth; in addition, we can also associate reliability, protection, and support with brown. Green clearly signifies the color of nature; thus, as the color of life, it exudes calm and represents a connection to the outside world. Research also confirms that people associate vitality with brown, but not at all with green [20].

This survey is a good example of how color associations do not necessarily mean the same thing to different age groups. The authors of the journal drew on sources dating back as far as 1942, with most of their sources originating from before the turn of the millennium. Of course, these studies should not be disregarded simply because a different result emerged among high school students in 2011. Rather, they should be viewed as evidence that colors likely affect different generations in different ways.

3.2.3 Communication

Good advertising appeals to emotions, just like colors do, so it's no surprise that the power of colors is often used in marketing as well. Depending on who our target audience is, we can use different colors. For example, when looking at gender preferences, women tend to prefer purple, green, and blue, while men prefer blue, green, and black. There are certain colors that are not recommended for use in advertisements because neither gender particularly likes them. Examples of such colors include brown and orange.

It's important to remember that marketing isn't just about commercials or posters. When designing websites, banners, and similar online ads, it's also worth considering that certain colors can lead to higher conversion rates. These colors include green, yellow, red, and orange, which, although not particularly favored by either gender, still achieve good results in terms of engagement [13].

Thanks to the lighter color scheme, visitors will feel comfortable on our site, which may lead them to make more purchases, but of course, there are downsides to this as well. If we want to publish more information on the site, the lack of adequate contrast will prevent us from conveying that valuable information to visitors; they won't notice it, won't be able to process it as easily, or simply won't consider it important [13].

Looking at the specific use of colors, red is a highly attention-grabbing shade; due to its blood pressure-raising and appetite-stimulating effects, it is used by numerous fast-food chains, food brands, and even retail chains. Examples include—among many others, of course—Coca-Cola, Burger King, KFC, Tesco, Spar, and Auchan [19]. Blue is one of the colors most closely associated with nature, due to the blue sky, and it can also increase work efficiency. It is the color of wisdom and trust, so many electronics companies and payment processing firms prefer to use this color, such as Samsung, PayPal, Visa, and Dell [21]. The third primary color is yellow, alongside red and blue. We associate it with daytime, so it radiates cheerfulness and optimism. It is the most eye-catching color and is excellent at grabbing shoppers' attention, making it very popular, especially when the goal is to encourage impulse buying. Among brands that use this friendly color, the most famous is undoubtedly McDonald's, but Ferrari and Nikon also fall into this category [19].

It is important to choose colors carefully in marketing, as different color combinations have different effects. There is a great deal that could be written on this topic, as we have an almost infinite number of different shades of colors at our disposal, and with the help of digital technology, we can even distinguish them using numbers, a so-called HEX code [22].

Sticking to the primary colors—that is, examining only blue, yellow, and red—I'd like to highlight a striking example of color pairing. When using a single color, its fundamental meaning comes to the fore; however, colors should be paired in such a way that the final result is neither too cool nor too warm in tone, as these can be

misleading and may not necessarily convey the intended message. It is therefore not surprising that blue is the most commonly used color in logos, and it is often paired with, for example, yellow or a shade of red [23]. A perfect example of this is the Scandinavian home furnishings brand, Ikea, whose blue-and-yellow logo is internationally recognized.

However, if we use very saturated shades of red and blue without pairing them with any other color—such as white—we end up with an overly intense, jarring combination that can be irritating to consumers [24]. This is precisely why Pepsi uses these colors in combination with white; the brand has grown into a world-famous, recognizable brand with vibrant yet visually pleasing design elements.

Blue is a very popular color in company logos. According to Interbrand research, more than a quarter of the world's 100 most influential brands use this color in their logos. In fact, 5 of the world's 10 largest and most popular brands have blue logos [25].

When all three primary colors are used in a single logo, they reflect playfulness, youthfulness, and childlike qualities. Burger King used these colors from 2000 all the way through 2021, until their rebranding, when the color blue was removed from the logo. But these colors are also found in the logo of the famous Pixar animated series Toy Story, which is aimed at children and features toys in the lead roles [23].

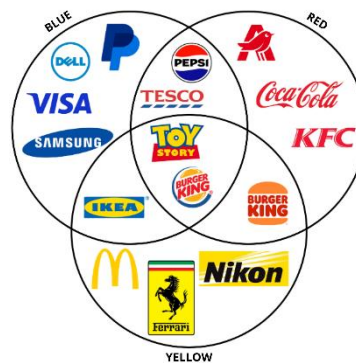


Figure 1

Venn diagram of logos using primary colors (Source: Own elaboration)

In short, while a brand's uniqueness, visual appeal, and aesthetics are important, it is essential to pay close attention to the careful selection of colors. A potential customer's first impression of a brand comes from its logo, so the logo's color is of paramount importance to a company's success.

Conclusions

This secondary research focuses on the significance of colors and their impact on consumers' emotions and purchasing decisions. The use of color by brands on websites or packaging can influence consumer behavior and may encourage or discourage potential customers from purchasing certain products or services.

To gain a thorough understanding of the topic, the research examines color marketing, specifically color symbolism and the meaning of colors, as well as the use of different colors in a company's brand identity. In addition, it introduces the reader to the effects, chains, and formation of color associations, and also addresses color psychology and color marketing as it influences consumer emotions.

The influential and motivational effects of colors are well-established; they are considered central elements of consumer decision-making. Subconscious needs can be shaped through visual presentation, making their conscious and ethical application essential from a corporate perspective.

This research does not aim to find solutions to the problems that arise. Its purpose is to draw the attention of future researchers to the study of the deceptive effects of colors. Through secondary research, the power of colors in marketing can be understood, and it demonstrates that this area of sensory marketing should not be underestimated.

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