

The Influence of Color on Human's Purchasing Behavior

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Abstract: Due to the rise of industrialization and consumerism, consumer markets become very competitive. Many companies are racking their brains to figure out how to attract as many consumers as possible in order to earn revenue. Under such circumstances, producers have tried different marketing methods. One of the methods relates to the color of the product, and it has shown significant effectiveness in grabbing the attention of consumers. The purpose of the paper is to figure out how color affects consumer purchase behavior by attempting to review multiple papers, and the researcher has separated it into several parts: in the first section, the research illustrates the meaning of color. In the second section, the researcher describes the effect of color on the brain and mood. In the third section, the researcher explains the effect of gender differences on color perception. In the fourth section, the researcher relates color with health. In the final sections, the researcher provides a final suggestion to both consumers and producers.

Keywords: consumer, purchasing behavior, color

1. Introduction

Following the rise of consumerism, studies concentrating on discovering the relationship between color psychology and marketing have increased. First of all, color psychology is defined as the study of how different colors affect human's mood and behavior. It also explains how humans react to different colors based on their culture, gender, and age [1]. Color not only plays a significant role in influencing people's purchase behavior but also contributes to the development of consumer brands. Many companies have put lots of effort in this industry in order to increase their products' sales. According to Gloria Johnson-Powell, a professor at Harvard medical school: "using colors properly in people's print collateral can cause a huge impact on people's reactions and feeling" [2]. This author further emphasized how people often ignore in everyday life play such crucial role.

Color is a feature that attracts people a lot. Based on statistics collection, over 93% of the consumers reported that they focus primarily on the appearance of the products. [3]. In addition, another study proved that color plays an important role in purchasing [4]. Moreover, in other study, researchers have proved that 51% of the consumers' purchase behavior is impacted by the color of the products, and 85% of the reasons why they buy these products is because of colors. Additionally, a study has compared the effectiveness of color advertisement versus black and white ads. It showed that colorful advertisements can attract people's attention and increase their physiological arousal, so that they can more easily recall the information from the advertisement [5]. These evidence strongly

suggests that color is crucial for marketing and that choosing the correct color for certain products can be effective in promoting sales.

The purpose of this essay is to uncover the relationship between color on products and consumer's behavior towards products. By doing that, this research will explain why color is important to humanity and how it can be such an influential feature in marketing. To achieve this, the present study has separated the information into several sections, including the structure of the brain associated with color, gender and age differences and color perception, and different cultures' relationship with color. Finally, this study will suggest that choosing an appropriate color for products will be hugely beneficial for selling products.

2. Meaning of Color

Color is defined as lights reflected by objects, usually measured in terms of the hue (shade of a color); saturation (the purity of a color), and brightness of the reflected light. People often use the electromagnetic spectrum in order to separate the range of different colors. There are two major categories of colors: one is the range of electromagnetic radiation between 380-565nm, and the other one is the range between 565-750nm. The colors that have shorter wavelengths, which is the range between 380-565nm, are named cold colors, such as violet, blue, and green, and the colors that have a longer wavelength, which is the range between 565-750nm, are known as warm colors, such as red, yellow, and orange. Each color will impact people differently based on their culture, belief, and gender.

3. Brain and Color

Over 80% of information transmitted to the brain is visual [6], and color plays a huge part in it. In a functional neuroimaging study, the authors proposed that in the fusiform gyrus, there is an area called V4 that plays a significant role in color perception since the V4 has been associated with color constancy operations (the ability to perceive colors as relatively constant over varying illuminations), color ordering tasks, object color recognition, conscious color perception, color imagery, and color knowledge [7]. The more colorful the color is, the higher the chance that it will be transferred to memory [8] because it will increase a human's attentional level. Thus, colorful images will lead to higher attentional levels. Having the correct color in products, therefore, can attract consumers and help them remember the merchandise. Those are all benefits for sellers to increase their sales.

4. Color Affects Mood

Light plays a very significant role in affecting human mood. This is caused by one of the human detecting light systems, the non-image-forming system, which is the system that affects circadian rhythms, like sleep patterns, hunger, homeostasis [9], and physiological and neurobehavioral human functions [10]. In the non-image-forming system, the light will be received by retinal ganglion cells (ipRGCs) and processed, and information will be transported to the hypothalamus, which is a key part of the brain responsible for secreting certain hormones that help people's bodies function usually, like cortisol and melatonin, maintaining the body's homeostasis, and controlling the endocrine system. This part of the brain makes a significant contribution to people's mood expression [11] because the hypothalamus is part of the limbic system, and the limbic system is the most well-known system that controls human emotional responses. In addition, different color wavelengths will affect the responses of the hypothalamus. To be more specific, there are two different wavelengths in colors: one is a longer wavelength which is called warm lights, such as red, orange, and yellow, and the other is the shorter wavelength which is called cold lights, such as blue, green, and indigo. Recently, some studies have shown that different wavelengths of colors will arouse people feel differently, Particularly, the

shorter wavelength will make people feel more aroused and energetic since ipRGC cells are very sensitive to blue light, which is a type of shorter wavelength light [12]. For example, Harvard researchers conducted an experiment and compared the different influences of the lights on the volunteers after they were exposed to blue light (450-495nm) versus exposure to green light (500-570nm) of the same brightness. Results showed that the blue light suppressed melatonin two times more efficiently when compared to the green light [13]. In addition, in another experiment conducted by the University of Toronto, researchers measured the levels of melatonin of volunteers who had worn goggles that can block blue light in a bright indoor environment to volunteers exposed to regular dim light without wearing goggles. Results showed that the levels of melatonin in both groups were almost the same. Therefore, the evidence above shows that light plays a significant role in affecting people's level of arousal, which in turn will impact the expression of mood. Thus, choosing different colors that can create different light on products may have a particular impact on people's moods because different moods are affected by different arousals, and high arousal will lead to people behaving impulsively by decreasing the activity of the prefrontal lobe [14]. If the color of the products can increase the levels of arousal of people, this may make people more willing to go into the shop, hence increasing the possibility of products being bought.

5. Gender and Age Differences Affect People's Perception of Color

Gender differences make a huge difference in people's perception of color [15]. Therefore, shop owners can use this identity to determine which color they want to use to attract more people to consume this product. Studies have shown that there are differences between males and females when it comes to their favorite colors. Initially, researchers have found that females have a tendency towards warm colors, such as red, pink, and yellow, compared with males, who have a tendency towards cold colors, such as blue, white, and black [16]. In addition, in another study, researchers from the United Kingdom have listed out ten different colors, including red, yellow, pink, brown, orange, white, black, blue, purple, and green. They then invited 330 British children, aged between 4 to 11 years old, and asked them to list their favorite color at the first and least favorite color at the end, in order. Results show that the majority of girls chose warm colors such as red, pink, and orange. In contrast, boys were more likely to choose cold colors such as black, blue, and green [17]. Furthermore, in a different experiment, researchers tested 94 volunteers, including both males and females, with ages between 20 to 26 years old. In the experiment, the volunteers were asked to choose their favorite color of rectangles. As a result, the researchers found out that men preferred greenish hue rectangles, but women preferred reddish hue rectangles [18].

Furthermore, color perception is also impacted by age, with one study mentioning that younger people are more inclined toward green, blue, black, and white. Middle-aged people prefer green, blue, and yellow. The elderly prefers brighter colors [19]. In this case, before the products are produced, the producer must consider who is the target for selling this product. For example, if one person wants to sell makeup products, he must make the color of the products likely toward the girl's aesthetics, such as pink. Thus, women will be more likely to purchase the products since they like the colors. That is the reason why many makeup brands in the shopping center will paint their logos pink to attract women. For example, the colorist, one of the makeup brands in China, the mind color of this brand is pink. Another example is the famous toy Barbie, the designer for this toy has also used pink as a mind color.

6. Subtle Color Affects People's Perception to Health

With the growth of industrialization, people fulfilled their material needs more easily. Thus, individuals started to shift their attention to internal development and mental health. Mental health is

a concept people often talk about in nowadays society, and they have spent much money and energy in order to seek a better state of mental health. Many studies have established that open green spaces such as parks or spaces that relate to nature will provide benefits toward people's mental health development [20-21]. In addition, a study has proved that people's mental health will be better when they get in touch with the natural environment. [22]. There is a strong relationship between natural environments and color since when people think about natural environments, they often think about the objects such as trees, grass, and flowers, all associated with the color green. Thus, it is possible to assume that specific colors may facilitate mental health improvement. Research proves that color contributes a lot to people's mental health improvement. Colors not only provide visual information but also emotional attachment to people. One study suggests that colors that are associated natural environment, such as green, will also help people to be cheerful and happy. Moreover, bright, soft, warm, and vibrant colors such as orange will help people reduce their stress and depression [23]. Knowing this information may inspire interior designers to pick suitable colors when they are designing shops. This may make people more willing to come to the shop since the interior design will make people feel more relaxed and cheerful. Thus, it may increase the sales of the shops when more people want to come to them. Recently, many industries have used this feature to attract consumers. For example, more shopping centers have started to design their shopping environment closer to the natural environment in order to attract visitors, and more coffee shops have created gardens in front of their shops in order to set up a cheerful atmosphere for consumers.

7. Conclusion

Color is an essential element in the world since it can provide a lot of information. For example, when people see a red light, they may stop their cars. In addition, color can also influence people's feelings. For example, after people see black, they may feel scared. Colors can also stimulate people's physiological arousal. Due to these characteristics of colors, people have long ago started to use colors as a way to improve their products and advertisements. In addition, research proves that putting suitable colors on the correct products will increase the possibility of attracting people to shops and making a purchase. The present study emphasized the importance of understanding color psychology to increase sales and influence purchasing behavior. It has explained different aspects in which colors affect consumers' purchase behaviors. First of all, it begins with the definition of color so that readers will have a better and clear understanding of the following paragraphs. Secondly, it explains how color affects people's minds. Thirdly, it illustrated how people's mood is affected by color and how the hypothalamus plays a crucial role in the perception of color. Moreover, it interpreted how gender differences cause considerable variations in the perceptions of color. Last but not least, it has illustrated how the interior design of a shop will affect consumers to buy products. Taken together, these findings suggest that sellers should be mindful of their clientele in order to target them more efficiently and effectively. Consumers, on the other hand, should pay attention to the unconscious effects of colors and how their behavior may be influenced in order to make wise choices while they are shopping.

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