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Psychological Imprints of Color on Mood: A Study on Young Adult Females

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Abstract

Color is known to affect people's moods. Studies have shown that different colors can evoke different emotional and psychological responses, and these responses can differ by gender. The study aims to find the predictive relation between color and mood in young adult females. A sample of 125 young adult females aged 17-25 years was taken. Two tests were used The Color and Word Stroop Test (SCWT) is a widely used neuropsychological test that assesses the ability to suppress cognitive. In this study computer version of the Stroop test was used, in which only two subscales of the Stroop test : the color words test, and the color test were used in this study and Brunel Mood Scale Questionnaire: It is a 24-item questionnaire of simple mood descriptors like anger, nervousness, dissatisfaction, and energy. BRUMS has six subscales, each containing four mood descriptors. The findings of the study revealed a vibrant spectrum of feelings associated with different colors. Like a burst of sunshine, yellow used participants with vigor and vitality. Black cast an ominous cloud of tension, while red ignited sparks of anger. Blue painted a canvas of melancholy, and green acted as a soothing balm, alleviating confusion. Hence, significant imprints of colour on mood were found.

Keywords: *Stroop test, Color Psychology, Brunel mood scale*

Introduction

The relationship between color and mood has become a topic of interest in psychology, neuroscience, and design. Since ancient times, civilizations have recognized the power of color to affect emotions, behavior, and overall well-being. Artists, philosophers, and scientists have long wondered whether colors have unique psychological properties or their effects result from cultural conditioning and personal experience.

Over the years, various studies have attempted to unravel the complex interactions between color and mood. Early research suggested that color could evoke specific emotional responses, and this concept gained momentum in the 20th century with the emergence of color psychology as a separate field of study. As a result, researchers have begun to study the physiological and psychological mechanisms behind the association between color and shape.

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Color results from the interaction between the spectral sensitivity of light receptors in the eye and the spectrum of light (distribution of light energy vs. wavelength) (Brodie, n.d.). Light waves of different wavelengths are reflected off matter and life forms, creating a spectrum of seven colors. Color is an integral part of our visual world, influencing how we perceive and interact with our surroundings. Beyond its aesthetic appeal, color has the remarkable ability to influence human emotions and mood

Color psychology is a branch of psychology that investigates how colors can affect human behavior, emotions, and cognitive processes. It explores how different colors are perceived and their impact on individuals' moods, thoughts, and physiological responses. Color psychology examines the psychological and cultural associations people attribute to specific colors and how these associations can influence decision-making, perceptions of environments, and overall well-being. This field of study considers the intricate interplay between color, perception, and psychology, offering insights into how colors can evoke various emotional and psychological responses in individuals.

Mood refers to a prolonged emotional state or characteristic that affects a person's subjective experience and outlook on life. A positive mood includes happiness, joy, contentment, and excitement. Negative moods include emotions such as sadness, anger, worry, and frustration. This can be caused by various stressors, obstacles, or perceived threats. A neutral mood is characterized by the absence of strong positive or negative emotions. In this situation, people may feel calm, comfortable, or disinterested, elevated mood refers to intense positive emotions that go beyond normal positive emotions. This can include excitement or extreme happiness, depressed mood is characterized by persistent and intense sadness, hopelessness, and low energy levels. Depression is a mood disorder that can significantly affect a person's daily life and functioning. Anxious mood exacerbates fear, anxiety, or anxiety. A mood disorder with excessive and persistent anxiety is referred to as an anxiety disorder. Angry mood includes feelings of anger, tiredness, or excitement. This mood may be related to stress or certain mental disorders.

A stable mood is a stable emotional state over time. Some people are more stable by nature, while others can be fickle. Atmosphere Resting mood is characterized by frequent changes in emotional state. People with mood disorders may experience severe mood swings.

How does color affect mood?

Luo.S., (2021) has done a review of the association between color and mood: 'The role of color in financial services advertising. Taking a novel approach, this study examines viewers' color-mood associations after viewing financial service advertisements. Investigated the relationship between advertising color and psychological mood, showing that yellow and red colors can increase positive mood while reducing negative mood. In the study of color association, some

associate the relationship with color shades. The study concluded that yellow and red colors in financial services ads showed a correlation between increased positive mood among viewers and decreased mood in Tech Influencers, suggesting that red and yellow ads can attract more traffic and drive action.

Kaur, A., (2020) conducted studies on female students. The main goal of this study is to investigate the relationship between primary colors and neutral colors and the four emotions of happiness, anger, fear, and sadness. Red has been observed to be more frightening than yellow, followed by black and white. This is because red evokes danger, death, blood, and hell, while yellow evokes vomiting, explosions, and heat, introducing elements of war and hatred.

From above studies also, easy to conclude that Color plays a greater role in our lives than we know. It affects our mind, body, and our emotions. Colors and needs are similar. Colors can elicit a variety of moods and emotions due to their psychological associations and cultural symbolism. Here are some types of moods that different colors can evoke: Red is often associated with energy, passion, and excitement, Agitation In excessive amounts red might lead to heightened anxiety, restlessness, or even aggression; Blue is frequently linked to calmness and tranquility. Lighter shades can promote relaxation and a sense of peace. In some contexts, blue can be associated with sadness or a feeling of melancholy. Green is often tied to nature and renewal. It can evoke feelings of harmony, freshness, and rejuvenation. Green is also connected to balance and stability, creating a sense of equilibrium and well-being; Yellow is often associated with happiness and positivity. It can convey a sense of optimism and joy. Too much yellow might lead to feelings of restlessness or even irritation.

Purple is linked to creativity and imagination. It can evoke feelings of inspiration and artistic thinking. Darker shades of purple can be associated with elegance, luxury, and sophistication; Orange is a color of energy and enthusiasm. It can evoke excitement and a zest for life. Orange is often seen as a playful and vibrant color that encourages interaction and socialization; Pink is often associated with tenderness and care. It can evoke feelings of warmth and affection. Lighter shades of pink can have a soothing effect on mood, promoting a sense of calm.

Black is linked to sophistication and power. It can evoke feelings of elegance and seriousness. In certain contexts, black might be associated with darkness or sadness; White often represents cleanliness, purity, and simplicity. It can convey a sense of openness and clarity. White can sometimes be perceived as sterile or empty, leading to feelings of detachment; Brown is often associated with earthiness and reliability. It can evoke feelings of stability and comfort. In certain contexts, brown might be seen as dull or unexciting.

Colors are known to influence people's moods, emotions, and behavior. Research has shown that different colors can evoke different emotional and psychological responses, and these responses

may vary by gender. However, research on the effects of color on mood in young adults is limited. Because color plays an important role in shaping a person's emotional state, it is important to study how color affects the mood of young adult women.

Understanding the effect of color on mood in this population can provide insight into the development of interventions and therapies that can be developed to improve well-being and emotional regulation in this group. There is some evidence that women are more sensitive to color than men.

As per our understanding and knowledge gained through various literature, research objective was to explore the relationship between different types of color and mood in young adult females.

Materials and Method

A within-subjects research design, also known as a repeated measures design was used for the study. Data were collected in small groups after obtaining permission from the department's authority. All respondents were informed that their responses to the questionnaires would be preserved confidential and used for research purposes only. Participants was chosen based on specific inclusion and exclusion criteria, which was clearly stated in the sample design and size. Participants were well informed about the purpose of the study and provided with a consent form to sign before participation. The mean age of the participants in the study was 17-25 years; total sample size was of 125 young adult females.

Stroop test Subscale was used. Colors - World : these items usually measure color preference and emotion. MCQ format was used to answer these questions using five options given for five colors Stroop Test Item Color Scale was administered then. These items assess color interference or the ability to resist interference with color information in the Stroop task. MCQ using the format used five options for five colors.

Used a Likert-type scale or other appropriate response format for participants to indicate their responses. Items from the Brunel Mood Scale were included to measure participants' moods. Used a Likert-type scale to rate the intensity of each mood (e.g., "Not at all" to "Very much"). Included some security questions to verify that the data is valid, such as attention checks.

A pilot test was conducted with a small group of participants to test the problem and collect feedback on the clarity and scope of the questionnaire. When the pilot survey was complete, it was distributed to the target audience (young adult women) through appropriate channels (e.g., social media, email & online forums). Survey responses were collected in Google Forms Data was collected through a survey method, with participants completing the questionnaires online. Correlation analysis, specifically using the Pearson correlation coefficient (r), was employed to quantify the strength and direction of the relationship between two variables. In the context of

color and mood, the correlation analysis was used to determine whether there is a significant association between exposure to specific colors and changes in mood states.

Results

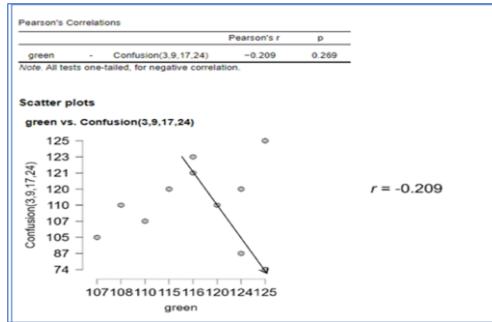


Figure 1: Correlation between color-green and mood -confusion

Figure 1 depicts A correlation coefficient of -0.20 indicates a weak negative correlation between the two variables. The negative sign implies that as one variable increases (in this case, exposure to the color green), the other variable (mood confusion) tends to decrease slightly. Given the weak negative correlation coefficient, it can be interpreted that there might be a slight tendency for individuals exposed to the color green to experience slightly lower levels of mood confusion. However, the weak correlation suggests that the impact of the color green on mood confusion might not be substantial.

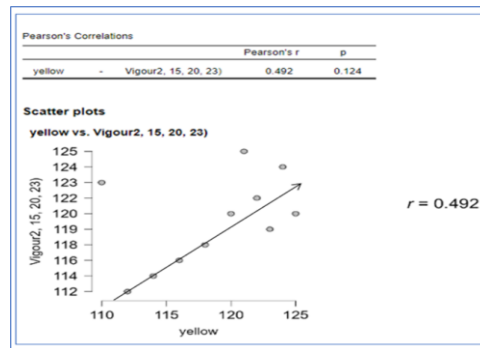


Figure 2: Correlation between color – yellow and mood -vigor

Figure 2 depicts A correlation value of $p = 0.49$ between the variables "color yellow" and "mood vigor" which indicates a moderate positive correlation between the two variables. The "p" value represents the level of statistical significance, and a value of 0.49 suggests that there is a relatively strong relationship between exposure to the color yellow and the experience of a vigorous mood.

The result could have practical implications in various contexts. For example, in interior design, strategically using yellow could potentially enhance feelings of energy and enthusiasm in a space.

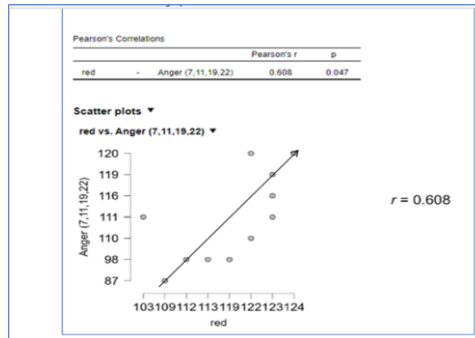


Figure 3: Correlation between color-red and mood–anger

Figure 3 depicts, a correlation coefficient of 0.60 indicating a strong positive correlation between the two variables. The positive sign implies that as one variable increases (in this case, exposure to the color red), the other variable (mood anger) also tends to increase. In other words, individuals who are more exposed to the color red might, on average, report higher levels of anger in their mood. This could align with the common associations of the color red with intensity, energy, and strong emotions. This implies that individuals who are exposed to the color red are more likely to report feeling anger, frustration, or heightened emotions associated with anger in their mood.

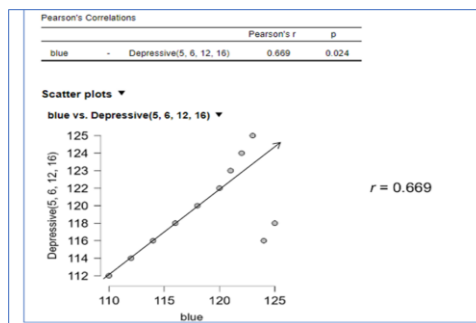


Figure 4: Correlation between color-blue and mood-depressive mood

Figure 4 represents, a correlation coefficient of 0.69 indicating a relatively strong positive correlation between the two variables. This positive correlation indicates that as one variable increases (in this case, exposure to the color blue), the other variable (mood depressive) also tends to increase. In simpler terms, individuals who are more exposed to the color, blue might, on average, report higher levels of depressive mood. This result could have implications in areas

such as fashion designers, architectures, positive psychology, and also marketing. The color blue is often associated with calmness, but the strong correlation with depressive mood suggests that its impact can be more complex than just promoting tranquillity. This implies that individuals who are exposed to the color blue are more likely to report feelings of sadness, melancholy, or emotional experiences associated with depression in their mood.

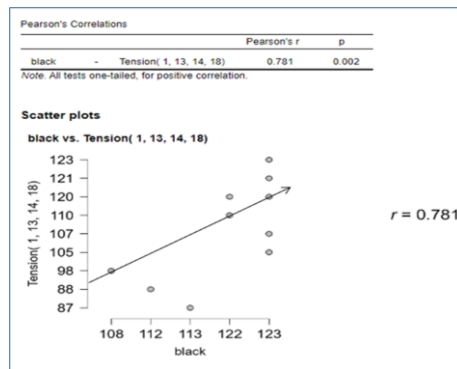


Figure 5: Correlation between color-black and mood -tension

Figure 5 represents, a correlation coefficient of 0.78 indicating a strong positive correlation between the two variables. The positive correlation indicates that as one variable increases (in this case, exposure to the color black), the other variable (mood tension) also tends to increase. This means that individuals who are more exposed to the color black might, on average, report higher levels of tension in their mood. This result could have implications for areas such as fashion designers, architectures, positive psychology, and also marketing. The color black is often associated with sophistication and formality, but the strong correlation with tension suggests that its impact can extend beyond aesthetics. This implies that individuals who are exposed to the color black are more likely to report feelings of anxiety, unease, or emotional states associated with tension in their mood.

Discussion

Color refers to the visual perception of different wavelengths of light. These wavelengths are detected by the cone cells of the human eye, which send signals to the brain that are interpreted as specific colors. Mood refers to a relatively persistent emotional state or characteristic that affects a person's emotional experience. Unlike emotions, which are short and specific reactions to stimuli, moods are more general and emotional states that can last for hours, days, or longer. This research reveals the complex relationship between color and mood, revealing interesting patterns that can influence our emotional state and psychological experience. The results of this study illuminate the power of color to evoke emotions and change our moods. A negative

correlation was found between the color green and mood confusion, indicating that exposure to green can have a calming effect, increase clarity, and reduce feelings of confusion. This concept shows the potential role of greenery in creating conditions conducive to focus and mental clarity.

The positive association found between yellow and mood emphasizes the strong and uplifting qualities often associated with this color. Exposure to yellow appears to be associated with a sense of enthusiasm, energy, and vitality. This phenomenon shows the potential of yellow to increase positive emotional states and promote feelings of excitement. Furthermore, the positive correlation between the red color and the mood of anger shows the power of red to evoke strong emotions. Red's association with anger and higher emotional states emphasizes the need to be careful when using this color, as it can suddenly increase feelings of anger and frustration.

Similarly, the positive association between blue color and low mood shows the complexity of blue's effects on emotions. Although often associated with tranquillity, blue's ability to evoke feelings of sadness or melancholy, especially in situations where a pleasant atmosphere is desired, calls for a new approach to its use.

Finally, the positive correlation between the color black and tension suggests that black can induce feelings of stress, unease, and discomfort when exposed to black stimuli. This finding aligns with the established association between black and negative emotions, suggesting that black has the potential to evoke a sense of tension in individuals. Designers, marketers, and psychologists should take into consideration this color-emotion relationship when creating environments, products, and experiences where minimizing tension is a priority. However, it's important to note that individual variations in perception and cultural factors could also influence the emotional responses to the color black.

Collectively, these connections reflect the complex interaction between color and human emotion. They emphasize the importance of color selection in settings as diverse as interior design, branding, marketing, and psychological therapy. However, it is important to recognize that individual differences, cultural backgrounds, and personal experiences can modulate these color-mood associations. Moving forward, continued research into the psychological imprints of mood colors will undoubtedly contribute to a deeper understanding of human emotions and feelings.

Conclusion

In conclusion, this research outlines a comprehensive study aimed at understanding the psychological imprinting of colors on emotions. By investigating the emotional responses to yellow, red, green, black, and blue, this research successfully attained the aim to shed light on the complex interplay between colors and human emotions. The potential implications of these

findings for various fields make this research an essential endeavor in the realm of psychological research.

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