



EXAMINING THE RELATIONSHIP BETWEEN MOOD TRAITS, COLOR PREFERENCES, AND WELL-BEING WITH MOOD STATES, COLOR PREFERENCE AND HAPPINESS

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ABSTRACT

This study explores the complex interplay of mood traits, color preferences subjective well-being, mood states and happiness among young adults. Our aim is to decipher the intricate connections between these elements. It seeks to understand how inherent mood traits influence general color preferences, how specific color choices can impact mood states and ultimately how these mood states contribute to levels of happiness and overall subjective well-being. In phase 1 we delved into these relationships with a sample of 153 young adults. Our findings reveal a positive correlation between happiness and subjective well-being. A significant link between positive moods and well-being and a noteworthy negative correlation between negative moods and well-being. Moreover, examined how color categories could moderate the relationship between mood and life satisfaction. Phase 2 delves deeper into these connections among 15 willing participants providing a more comprehensive understanding of these dynamics. The implications of our research extend across domains such as marketing and therapy where knowledge of how colors influence mood and well-being can shape more supportive environments and effective interventions. This study also offers personal insights into emotional preferences for enhancing well-being. However, the acknowledged limitations include the study's brevity and sample size which open avenues for future longitudinal research. Our findings hold the promise of a brighter, more emotionally attuned world for young adults and communities.

Keywords: Mood traits, Mood States, Color Preference, Subjective wellbeing, Life Satisfaction, Happiness

INTRODUCTION:

The relationship between mood traits, color preferences, and subjective well-being has garnered significant interest in the field of psychology. Researchers have sought to understand how different colors can affect human mood and behavior, as well as how color can be utilized to enhance emotional well-being. Moreover, investigations into the causal connections between colors and psychological reactions have practical implications in areas such as healthcare design and therapy. By identifying gaps in existing literature and proposing new avenues for exploration, this research holds promise for advancing our understanding of psychology. Mood traits, which encompass an individual's characteristic emotional states such as anxiety, depression, or introversion, have been found to correlate with color preferences. For instance, studies have shown that individuals with a preference for black tend to exhibit depressive and anxious traits Color preference, on the other hand, refers to an individual's inclination towards certain colors over others.⁴ Subjective well-being (SWB) plays a critical role in how individuals experience and evaluate their lives, as well as specific domains and activities within their

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lives.⁵ Understanding how mood traits interact with color preference to influence subjective well-being is a key focus of this research.

Mood states, which are less specific, less intense, and more transient than emotions or feelings, encompass individuals' overall emotional states or feelings that can fluctuate from minutes to days.⁶ The study also aims to explore how mood states impact happiness, which encompasses a range of positive and pleasant emotions from contentment to intense joy. By examining the relationships among mood traits, color preference, subjective well-being, and happiness, while considering the moderating influence of color preference, this research seeks to shed light on the complex interplay between colors, emotions, and well-being. The findings of this study can provide valuable insights for various fields, including healthcare design and therapy, and can inform future research endeavors in psychology.

Literature Review

According to Ecological Valence Theory (EVT), individuals have a natural inclination to prefer positive stimuli and avoid negative ones due to their evolutionary adaptation.⁷ EVT proposes that color preferences are a result of an evolutionary process that guides individuals towards beneficial objects and away from harmful ones.⁸ EVT suggests that humans tend to prefer colors within the natural color palette during thriving periods, while colors such as brown, gray, and dark yellow elicit negative emotional responses due to their association with dying vegetation and rotting food. EVT helps explain color preferences and their potential benefits for physical, psychological, and cognitive well-being. In the context of this research, EVT can be applied in several ways. First, EVT suggests that individuals with specific mood traits may naturally gravitate towards colors that align with their emotional valence. For example, individuals with high levels of anxiety might be drawn to calming and soothing colors. This research can explore whether mood traits influence color preferences and how these preferences subsequently affect current mood states.

Furthermore, EVT can explain how color choices influenced by emotional valence may impact mood states and colors associated with positive emotions. According to EVT, these color choices may contribute to heightened happiness in the moment. This research can investigate whether the happiness experienced in the moment is related to individuals' overall subjective well-being. Additionally, EVT proposes that colors have inherent

⁵ Panel on Measuring Subjective Well-Being in a Policy-Relevant F, Committee on National S, Division on B, Social S, Education, National Research C. The National Academies Collection: Reports funded by National Institutes of Health. In: Stone AA, Mackie C, editors. Subjective Well-Being: Measuring Happiness, Suffering, and Other Dimensions of Experience. Washington (DC): National Academies Press (US)

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⁶ Searight HR, Montone K. Profile of Mood States. In: Zeigler-Hill V, Shackelford TK, editors. Encyclopedia of Personality and Individual Differences. Cham: Springer International Publishing; 2017. p. 1-6.

⁷ Yokosawa K, Schloss K, Asano M, Palmer S. Ecological Effects in Cross-Cultural Differences Between U.S. and Japanese Color Preferences. *Cognitive Science*. 2015;40.

⁸ Al-Rasheed AS. An experimental study of gender and cultural differences in hue preference. *Frontiers in Psychology*. 2015;6.

emotional valence and can evoke specific emotional responses. This research can delve into how individual color choices guided by EVT directly influence mood states. It can explore whether these color choices, aligning with emotional valence, impact not only mood states but also subjective well-being and the level of happiness experienced by individuals.

Hedonic Well-being Theory:

The Hedonic Well-being Theory, also known as the hedonic happiness theory, provides valuable insights into this research. It suggests that human well-being is primarily driven by the pursuit of pleasure and the avoidance of pain.⁹ Individuals naturally seek experiences and choices that bring them pleasure while minimizing sources of discomfort. This theory relates to the research by examining how color preferences influenced by mood traits or general tendencies align with pleasurable emotions. For example, it can investigate whether individuals tend to prefer colors associated with positive emotions and whether these preferences contribute to their subjective well-being and happiness. The theory also underscores the importance of mood states in determining emotional well-being, suggesting that certain color choices may lead to elevated mood states, thereby enhancing overall well-being and happiness in the moment.

Circumplex Model of Affect:

The Circumplex Model of Affect is a theoretical framework that suggests all affective states arise from cognitive interpretations of core neural sensations, categorized by two independent neurophysiological systems: valence and arousal. It maps affective states onto a two-dimensional circular space, with valence (positive or negative) on the horizontal axis and arousal (high or low) on the vertical axis. This model measures emotion based on arousal (activation or excitation) and valence (pleasantness) dimensions.¹⁰ In this research, the Circumplex Model's valence dimension can be used to examine whether individuals' mood traits, associated with specific valence tendencies (e.g., anxiety), influence their general color preferences. For instance, it can investigate whether individuals with a propensity for positive valence mood traits tend to prefer colors associated with positive emotions, shedding light on how emotional valence influences color preferences. The arousal dimension of the Circumplex Model indicates the intensity or activation level of emotions. This research can explore whether state-based color choices are linked to changes in emotional arousal and mood states. For example, it can investigate whether individuals select highly arousing colors during moments of high energy and low arousing colors during relaxation, leading to shifts in mood states. The Circumplex Model's circular arrangement of emotions can also be related to subjective well-being. This research can explore whether individuals reporting

⁹ Rebar AL, Stanton R, Geard D, Short C, Duncan MJ, Vandelanotte C. A meta-meta-analysis of the effect of physical activity on depression and anxiety in non-clinical adult populations. *Health Psychol Rev.* 2015;9(3):366-78.

¹⁰ Posner J, Russell JA, Peterson BS. The circumplex model of affect: an integrative approach to affective neuroscience, cognitive development, and psychopathology. *Dev Psychopathol.* 2005;17(3):715-34.

higher well-being tend to position their emotional experiences closer to positive valence and whether these positions are associated with specific color choices that align with positive emotions.

The concept of emotional balance in the Circumplex Model refers to the co-occurrence of emotions from different valence categories. This research can investigate whether individuals who experience a balanced mix of emotions from both positive and negative valence categories are more likely to report higher levels of happiness. This balance can be examined in the context of their color choices and mood states.

The relationship between color and mood has been extensively studied, revealing that specific colors can evoke different emotional states.¹¹ Warm colors, such as red, orange, and yellow, are associated with warmth, energy, and excitement. They can elicit emotions like passion, comfort, anger, and power.¹² On the other hand, cool colors like blue, green, and violet are linked to calmness, tranquility, and relaxation (Lewis, 2023). These colors have been found to influence mood and can be preferred based on individual preferences and cultural backgrounds. Research conducted by explored the relationship between color and mood and found that color choices vary depending on the mood experienced. For example, yellow hues were consistently associated with joy, while yellow-green hues were associated with relaxation. The study also revealed that color preferences can vary across different cultural backgrounds.¹³ Cultural factors play a significant role in shaping our perception and experience of color.

Furthermore, studies have shown that color preference is influenced by various factors such as culture, gender, age, and language. For instance, women in Indian and British cultures have different color preferences, with Indian women preferring pink and British women preferring blue. Men in China tend to prefer brighter colors compared to women. Language fluency also affects color preference, with individuals fluent in Japanese and English displaying different preferences compared to individuals in Japan and the United States.¹⁴ These studies highlight the complexity of color preference, indicating that it is influenced by multiple factors. Cultural contexts, personal experiences, and linguistic influences all contribute to individuals' color choices and exposure. Understanding the nature of color and the intricate mechanisms involved in emotion processing requires further research.¹⁵ In conclusion, color preference is not solely subjective but influenced by various factors. Cultural backgrounds, gender, age, and language fluency all play a role in shaping color preferences. The studies reviewed provide valuable insights into the

¹¹ Jameson KA, Webster MA. Color and culture: Innovations and insights since Basic Color Terms—Their Universality and Evolution (1969). *Color Research & Application*. 2019;44(6):1034-41.

¹² Odetti JV. The study of color as a component of urban cultural construction: A theoretical reflection and methodological proposal. *Color Research & Application*. 2023;48(5):453-67.

¹³ Yardley JK, Rice RW. The relationship between mood and subjective well-being. *Social Indicators Research*. 1991;24:101-11.

¹⁴ Yokosawa K, Schloss K, Asano M, Palmer S. Ecological Effects in Cross-Cultural Differences Between U.S. and Japanese Color Preferences. *Cognitive Science*. 2015;40.

¹⁵ Bonnardel V, Beniwal S, Dubey N, Pande M, Bimler D. Gender difference in color preference across cultures: An archetypal pattern modulated by a female cultural stereotype. *Color Research & Application*. 2017;43.

relationship between color and mood, emphasizing the need for further research to fully comprehend the complexities of color preference and its impact on human emotions.

Rationale:

The rationale for this study is to fill a research gap by investigating the relationships between mood traits, color preferences, mood states, subjective well-being, and happiness. Previous research has focused on individual aspects, but this study aims to integrate these factors to provide a more comprehensive understanding. The findings can have practical implications in various domains, such as interior design, marketing, and therapy, by informing the creation of environments that promote positive emotions, improving branding and product design, and guiding the development of strategies to enhance emotional well-being. Furthermore, this study offers personal benefits by providing individuals with insights into their own emotional tendencies and preferences, empowering them to make informed choices to improve their mood and overall well-being. By building upon previous research and conducting rigorous empirical research, this study contributes to the scientific understanding of how psychological traits and color preferences interact to influence mood, well-being, and happiness. Exploring the complex interplay between these factors has broader implications for our understanding of human behavior and emotions, shedding light on the ways in which color choices can impact our psychological states and happiness. The research questions in this study focus on examining the relationships between mood traits and mood states, the relationship between momentary happiness and subjective well-being, and the impact of colors on moods, subjective well-being, and happiness.

Aim:

The aim of this research is to investigate the intricate relationships among mood traits, color preferences, subjective well-being, mood states, and the level of happiness. This study seeks to understand how individuals' inherent mood traits influence their general preferences for colors, how color choices in specific moments affect mood states, and whether these mood states subsequently contribute to levels of happiness and overall subjective well-being.

Objectives:

- Examine the relationship between happiness and subjective well-being.
- Explore the impact of mood states on well-being.
- Investigate the role of color categories in moderating the mood-life satisfaction relationship.

Hypotheses:

- Positive relationship between happiness and subjective well-being.
- Significant positive relationship between positive moods and well-being.
- Significant negative correlation between negative moods and well-being.
- Color categories will moderate the relationship between mood and life satisfaction.

Method

The study utilized a mixed-method research design, combining correlational, observational, and observational comparison approaches to investigate the relationship between mood traits, color preferences, and subjective well-being. In the correlational design, participants completed a structured questionnaire that assessed mood traits, general color preferences, and subjective well-being using standardized scales such as the Profile of Mood States (POMS) and the Satisfaction with Life Scale (SWLS). In the observational design, participants were observed in real-time settings for 30 days, and their mood states and color choices were documented using online data collection methods. The observational comparison involved participants completing the questionnaire while their mood states and color choices were observed simultaneously.

Phase 1: of the study collected data from 150 participants, with an initial pilot test involving 50 participants to evaluate the reliability of the instruments. The data collected in this phase aimed to measure individual mood traits, color preferences, and subjective well-being.

Phase 2: assessed participants' mood states, color preferences, and happiness levels over a one-month period. A specially designed survey was administered periodically to capture changes in responses and analyze mood states, color preferences, and happiness.

The research instruments used in the study included the Profile of Mood States (POMS) to measure various mood states and the Satisfaction with Life Scale (SWLS) to assess overall cognitive assessment of life satisfaction.

Procedure:

- The study followed ethical procedures, obtaining informed consent from participants. Data collection involved questionnaires, surveys, and assessments, and quality control mechanisms were implemented to ensure the reliability and accuracy of the responses.

In Phase 2, participants from Phase 1 were invited to participate further. They completed a specially designed survey periodically over one month, capturing their mood states, color preferences, and self-reported happiness levels. Data analysis aimed to identify patterns and trends in the responses over time. The research instrument used in phase 2 of the study included a survey that collected data on participants' mood, color preferences, and happiness. Participants were asked to provide the date and time of survey completion, allowing for analysis of temporal patterns. They were also prompted to select their current emotional state from a list of mood categories, such as happiness, sadness, fear, anxiousness, anger, and surprise. This information helped capture the timing and emotional fluctuations of participants during the survey. Another component of the survey was the color preference assessment, where participants selected the color that best represented their current mood from options such as red, yellow, green, white, purple, brown, and blue. This data aimed to explore the relationship between mood and color choices. To measure happiness, participants were asked to rate their current level of happiness on a scale ranging from 1 (down in the dumps) to 10 (on top of the world). This

single-item happiness scale provided insights into participants' overall happiness levels compared to others in the United States.

The sample for the study consisted of 153 young adult participants, selected through convenience sampling. Inclusion criteria included falling within the age range of 18-35, voluntary agreement to participate, capacity to provide informed consent, and logistical accessibility. Exclusion criteria encompassed not meeting the age range, lacking capacity for informed consent, declining or withdrawing from participation, and logistical inaccessibility. The results section of the study presents the findings that shed light on the relationships between mood traits, color preferences, and well-being, as hypothesized in the research questions. The planned analyses included descriptive analysis to provide an overall understanding of the data, correlational analysis to examine the connections between moods, well-being, and color preferences, and mediation analysis to explore the potential moderating effect of color categories on the associations between mood and life satisfaction. These analyses were conducted in phase 1 of the study to address the hypotheses. The findings from these analyses reveal the intricate interactions among mood, color preferences, and well-being, offering valuable insights into the dynamics of these variables within the study.

Table 1

Psychometric Properties for Study variables

Variables/Sub-scales	Mean	SD	Range	Cronbach's α
FAT	3.6	0.6	1-20	0.75
TEN	3.4	0.6	1-24	0.76
ANG	3.9	0.72	1-33	0.74
DEP	3.0	0.5	1-28	0.75
CON	3.3	0.55	1-20	0.73
ERA	3.7	0.71	1-23	0.72
VIG	3.1	0.73	1-56	0.77
SWLS	3.93	0.79	1-34	0.88

Note: FAT= Fatigue, TEN= Tension, ANG= Anger, DEP= Depression, CON= Confuse, ERA= Esteem-related Affect, VIG= Vigorous, SWLS= Satisfaction with life scale.

The study used different subscales of the POMS to measure various mood traits. The results showed that:

- The FAT subscale had an average score of 7.76, suggesting a moderate level of response, with some variability. The range of scores varied from 0 to 20, indicating a diverse range of responses. The internal consistency of this subscale was strong.
- The TEN subscales had a mean score of 9.14, indicating slightly higher scores with relatively more variability. The range of scores extended from 0 to 24, showing a broad spectrum of responses. The internal consistency of this subscale was strong.
- The ANG subscale had a mean score of 8.89, suggesting moderate scores with significant variability. The range of scores covered a wide range from 0 to 33, indicating diverse responses. The internal consistency of this subscale was strong.
- The DEP subscale had an average score of 9.60, indicating slightly higher scores with notable variability. The range of scores spanned from 0 to 28, revealing a wide array of responses. The internal consistency of this subscale was strong.
- The CON subscale had a mean score of 8.63, representing moderate scores with some variability. The range of scores extended from 0 to 20, indicating a diversity of responses. The internal consistency of this subscale was acceptable.
- The ERA subscale had an average score of 12.7, signifying relatively higher scores with less variability. The range of scores spanned from 4 to 23, indicating a narrower range of responses. The internal consistency of this subscale was relatively low.
- The VIG subscale had a mean score of 10.1, representing moderate scores with some variability. The range of scores covered a wide range from 0 to 56, indicating diverse responses. The internal consistency of this subscale was moderate.
- The SWLS scale had an average score of 21.93, indicating relatively higher scores with some variability. The range of scores extended from 5 to 34, indicating a range of responses. The internal consistency of this scale was moderate.

Table 2

Descriptive statistics for Study Variables

Variable	Depression			Anxiety		Stress	
	Mean	SD	Range	Mean	1. Error	Mean	1. Error
SS	.92	.71	33	.597	.254	.94	.603
EM	.55	.01	72	.41	.254	.049	.603

ID	.67	.73	2-105	.75	.54	232	503
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Note. TLSS= Total life satisfaction scale, TPM= total positive moods, TMD= total mood disturbance

Table 3

Pearson Product Moment Correlation between variables

Variables			
Life satisfaction			
Positive moods	0.265 ***		
Negative moods	0.446 ***	0.244 **	

* p < .05, ** p < .01, *** p < .001

There is a statistically significant positive correlation ($r = 0.265, p < .001$) between life satisfaction and positive moods. This suggests that as positive moods increase, life satisfaction tends to increase as well. The positive correlation indicates that individuals reporting more positive moods are likely to report higher levels of life satisfaction. Findings also show that There is a strong and statistically significant negative correlation ($r = 0.446, p < .001$) between life satisfaction and negative moods. This indicates that as negative moods increase life satisfaction tends to decrease. The negative correlation suggests that individuals experiencing more negative moods are likely to report lower levels of life satisfaction. The table shows there is a statistically significant negative correlation ($r = 0.244, p < .01$) between positive moods and negative moods. This suggests that as negative moods increase positive moods tend to decrease. The negative correlation implies that individuals reporting more negative moods are likely to report fewer positive moods.

Table 4

Results of Mediation Analysis

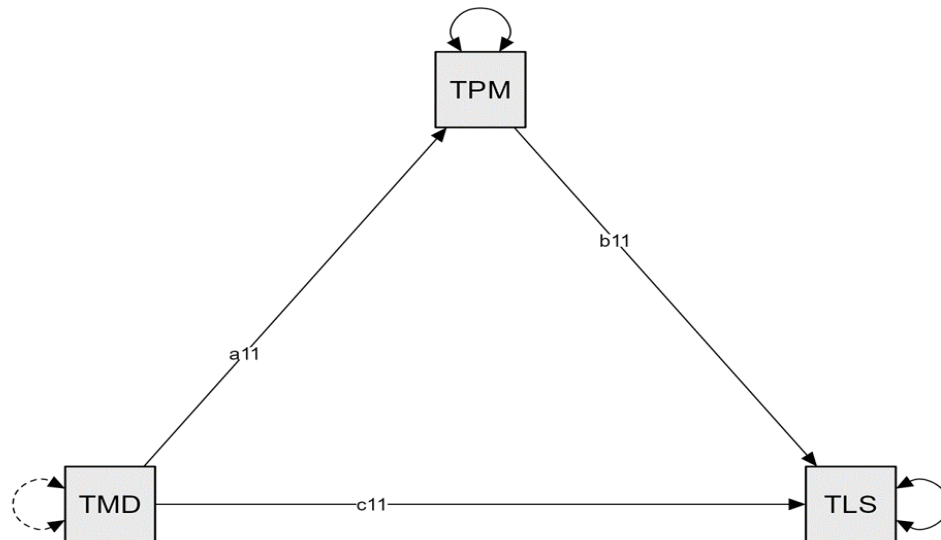
Effect	Path	B	SE	% CI		Z	p
				Lower	Upper		
Total	ID → TLSS	0.093	0.015	0.023	0.063	142	0.001
Indirect	ID → TPM → TLSS	0.008	0.005	0.018	0.080	820	0.069
Direct	ID → TLSS	0.085	0.015	0.015	0.055	506	0.001

Note: TMD = Total of Mood Disturbance, TPM = Total of Positive Moods, and TLSS = Total of Life Satisfaction Scale.

The total effect ($\beta = -0.093, p < .001$) represents the overall relationship between TMD and TLSS. The negative coefficient suggests that TMD has a significant direct effect on TLSS. In other words, TMD directly impacts TLSS and this effect is statistically significant. The indirect effect ($\beta = -0.008, p = 0.069$) assesses the mediated relationship from TMD to TLSS through the mediator TPM. In this case, the indirect effect is not statistically significant. This implies that the mediator TPM does not significantly mediate the relationship between TMD and TLSS in this analysis. The direct effect ($\beta = -0.085, p < .001$) represents the relationship between TMD and TLSS without considering the mediator TPM. The negative coefficient indicates that TPM has a significant direct effect on TLSS, and this effect remains statistically significant.

Figure 1

Mediation Analysis Model



Note: This figure depicts the relationships between the dependent variable (TLSS) and the independent variables TPM and TMD as represented by the coefficients b_{11} and c_{11} for TMD and TPM respectively. Additionally, it illustrates the relationship between the mediator variable TPM and the independent variable TMD denoted by the coefficient a_{11} in mediation analysis. The figure aids in understanding how the independent variable TMD influences the dependent variable TLSS both directly and indirectly through the mediator TPM the indirect effect of TMD on TLSS through TPM is calculated by multiplying the coefficients a_{11} and b_{11} . This indirect effect is assigned to the variable ind_x1_y1 representing how TMD impacts TLSS via TPM lastly, the figure calculates the total effect of TMD on TLSS by combining the indirect effect ind_x1_y1 with the direct effect represented by the coefficient c_{11} .

Phase 2

In phase 2 of the study, the objective was to delve deeper into the intricate relationships between mood states, color preferences and happiness in line with the research hypotheses a series of analyses including correlation and mediation analysis was conducted to address the following research questions within this phase. The correlation between mood states and happiness was explored addressing the hypothesis that a positive relationship exists between happiness and subjective well-being. The results illuminated how mood states are related to an individual’s level of happiness expanding upon the correlations. Mediation analysis was conducted to further investigate the underlying mechanisms in the relationship between mood states, color preferences and happiness. This analysis aimed to test the hypotheses that a significant positive relationship exists between positive moods and happiness and a significant negative relationship exists between negative moods and happiness. The subsequent sections provide a detailed summary of the findings and their significance within the context of the research objectives.

Table 1

Pearson Product Moment Correlation between variables

Variables						
Positive moods						
Negative moods	-.634*					
Happiness_level	-.150	.663**				
DM	.070	-.061	.478			
CM	-.023	-.398	-.060	.212		
SS	.164	-.173	-.099	.667**	.086	

Note: * p < .05, ** p < .01, *** p < .001

Positive moods are listed on the diagonal of the table and are perfectly correlated with themselves. Negative moods exhibit a statistically significant negative correlation with happiness level ($r = -0.150$, $p < .05$) indicating that as negative moods increase, happiness level tends to decrease. This suggests a modest negative relationship between experiencing negative moods and happiness. Happiness level exhibits a significant positive correlation with positive moods ($r = 0.663$, $**p < .01$). This implies that as positive moods increase happiness, the level tends to increase indicating a positive relationship. The table shows there are no statistically significant relationships between

TDM, TPM, and the other variables in this analysis. Life satisfaction has a significant positive correlation with happiness level ($r= 0.399, p=0.141$). This suggests that as happiness level increases, TLSS tends to increase, although the significance level is not as strong ($*p< .05$). The table also indicate that there is a significant negative correlation between life satisfaction and negative moods ($r= -0.667, **p< .01$) this indicates that as negative moods increase life satisfaction tends to decrease, revealing a substantial negative relationship. Life satisfaction does not have a significant correlation with positive moods ($r= 0.164, p= 0.558$).

Table 2

Results of Mediation Analysis

Effect	Path	B	SE	% CI		p	
				Lower	Upper		
Total	Pos → Happiness_level	.67	.049	.245	.051	.430	.001
Indirect	Pos → Neg → Happiness_level	.52	.048	.074	.294	.41	.002
Direct	Pos → Happiness_level	.18	.011	.368	.288	3.949	.001

Note: CI= confidence interval, Pos= positive moods, Neg= negative moods

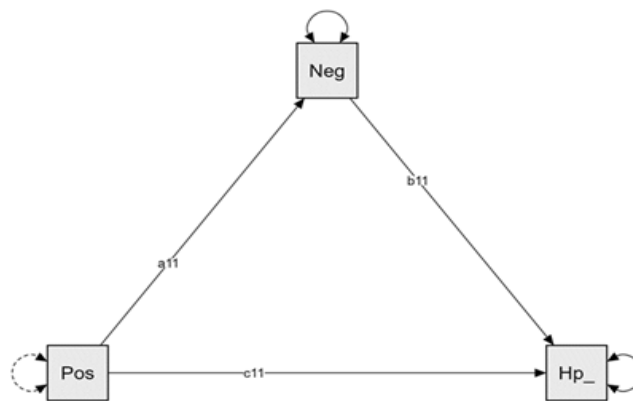
The table presents the results of a mediation analysis examining the relationships between Positive moods, Negative moods (as a mediator), and happiness level.

The total effect indicates the overall relationship between Positive moods and happiness level, showing a positive coefficient that suggests a significant direct effect. This means that Positive moods directly impact happiness level, and this effect is statistically significant. The indirect effect examines the mediated relationship from Positive moods to happiness level through the mediator Negative moods. The indirect effect is statistically significant, indicating that Negative moods significantly mediate the relationship between Positive moods and happiness level. The direct effect represents the relationship between

Positive moods and happiness level without considering the mediator Negative moods. It shows a positive coefficient, indicating a significant direct effect that is extremely strong and statistically significant. In summary, Positive moods have a significant direct effect on happiness level, and this relationship is strong and statistically significant. Additionally, Negative moods significantly mediate the relationship between Positive moods and happiness level.

Figure 1

Mediation path analysis for happiness level



Note. In this figure the direct effect of positive moods on happiness level denoted by c11 is presented. Additionally, it illustrates the indirect effect of positive moods on happiness level through negative moods b11 mediated by a11. This indirect effect is represented by the variable ind_x1_y1. The figure concludes by showing the total effect of positive moods on happiness level by combining the indirect effect and the direct effect c11.

Table 3

Path analysis results for effects on TLSS

Effect	Path	Beta	SE	% CI		Z	Sig.
				Lower	Upper		
Total	DM → TLSS	.022	.006	.031	.001	3.842	.001
	M → TLSS	.023	.018	.054	.020	2.74	.003
Direct	DM → Pos.M → TLSS	.57e-4	.001	.004	.010	.96	.345
	DM → H.L → TLSS	.004	.004	.020	.002	.944	.345

	M → Pos.M → TLSS	002	008	056	022	200	341
	M → H.L → TLSS	011	011	011	045	029	353
indirect	M → TLSS	003	003	026	005	021	307
	M → TLSS	009	010	019	048	092	372
irect	M → TLSS	019	006	035	005	067	002
idual variance	M → TLSS	-0.032	019	072	022	019	096
	s.M → H.L	382	99	863	068	920	055

Note: CI= confidence interval, L= lower, U= Upper, TDM= total disturbance of mood, TPM= total positive moods, TLSS= total life satisfaction, Pos.M= positive moods, H.L= Happiness level, T.indirect= total indirect

Table 3 presents the results of a mediation analysis on the effects of various pathways on total life satisfaction (TLSS). The total effect of total mood disturbance (TDM) on TLSS is negative and statistically significant. This means that an increase in TDM is associated with a decrease in TLSS. Similarly, the total effect of total positive mood (TPM) on TLSS is also negative and statistically significant.

The indirect effects of TDM and TPM on TLSS through positive mood and happiness level are examined. The first indirect effect, involving TDM's influence on TLSS through positive mood, is found to have a negligible impact and is not statistically significant. The second indirect effect, involving TDM's influence on TLSS through happiness level, is also not statistically significant, suggesting it does not significantly affect TLSS.

The third indirect effect, which is similar to the first one, shows minimal impact and is not statistically significant. The fourth indirect effect, involving TPM's influence on TLSS through happiness level, is positive but not statistically significant.

The total indirect effects of TDM and TPM on TLSS are both not statistically significant, indicating that their indirect influences on TLSS are not substantial.

The direct effect of TDM on TLSS is negative and statistically significant, indicating a significant direct negative impact. However, the direct effect of TPM on TLSS is negative but not statistically significant, suggesting a limited direct influence.

There is a negative residual covariance between positive mood and happiness level, which approaches statistical significance. This indicates a potential negative relationship between positive mood and happiness level, but further investigation is needed to confirm its significance.

Table 4

Hypotheses and their acceptance status

Hypothesis	Accepted / No	Description
	Yes	There is a positive relationship between happiness and subjective well-being
	Yes	There is a significant positive relationship between positive moods and well-being
	Yes	There is a significant negative relationship between negative moods and well-being
	Yes	Color categories moderate the relationship between mood and life satisfaction
	Yes	There is a positive relationship between happiness and subjective well-being
	Yes	There is a significant positive relationship between positive moods and happiness
	Yes	There is a significant negative relationship between negative moods and happiness

Discussion

The study focused on examining the interplay between mood traits, color preferences, subjective well-being, mood states, and happiness. In phase 1, we explored the relationships between happiness, positive moods, negative moods, and subjective well-being. We also investigated the moderating influence of color categories on the relationship between mood and life satisfaction. Our findings supported the hypotheses that happiness is positively related to subjective well-being, positive moods are positively related to well-being, negative moods are negatively related to well-being, and color categories can moderate the relationship between mood and life satisfaction. The positive relationship between happiness and subjective well-being aligns with previous research showing that hedonic well-being, closely associated with happiness, is linked to increased positive affect, vitality, and life satisfaction. Pleasure-seeking behaviors are also associated with reduced negative affect, depression, and stress.

The positive relationship between positive moods and well-being is consistent with previous research demonstrating that positive emotions are associated with improved

physical and mental health, greater empathy, trusting relationships, and cooperation. Positive emotions are also indicators of flourishing and can be cultivated to enhance well-being. The negative relationship between negative moods and well-being is in line with previous findings showing that insufficient sleep may lead to intense negative emotions and persistent negative mood states. Negative emotions are also associated with mental health disorders such as depression and anxiety. The moderation effect of color categories on the relationship between mood and life satisfaction supports the idea that emotions of the same valence can have different effects depending on the category of the emotion. For example, individuals in positive moods may make different decisions based on whether the mood falls into a positive or negative category. In phase 2, we further examined the relationship between happiness and subjective well-being. Our findings supported the hypothesis that happiness is positively related to subjective well-being. This aligns with research indicating that subjective well-being involves the appreciation of one's personal condition and enjoyment of life as a whole. We also found support for the hypothesis that positive moods are positively related to happiness. Previous research has shown that strong ties to friends and family, commitment to spending time with loved ones, and positive affect are associated with higher levels of happiness. Additionally, our study revealed a negative relationship between negative moods and happiness, consistent with research indicating that negative emotions are associated with lower levels of happiness and subjective well-being.

In conclusion, our study highlights the interconnectedness of feelings, color preferences, and overall happiness. The colors we prefer can impact our emotions and influence our happiness and life satisfaction. This has implications for designers, marketers, and therapists in creating environments and products that enhance well-being. Individuals can also use color choices in their daily lives to improve mood and well-being. However, it is important to note that our study has limitations, such as the specific sample and location examined within a short time frame. Further research is needed to fully understand these connections across diverse populations and over longer periods. Overall, this study marks the beginning of an exciting journey into exploring the links between emotions, color choices, and happiness, with promising possibilities for enhancing our lives based on these findings.

Implications

Current research has important implications for various fields, including psychology, design, marketing, therapy, and personal well-being. It highlights the complex relationship between mood traits, color preferences, subjective well-being, mood states, and happiness. Understanding these connections can significantly contribute to psychology by emphasizing the role of color choices in shaping emotional experiences and overall well-being. Design professionals can use this knowledge to create spaces that foster positive emotional experiences, improving mental health and quality of life. Marketers can incorporate these insights into their strategies, selecting colors that elicit desired emotional responses in product packaging, branding, and advertising campaigns. Mental health professionals can integrate color therapy and deliberate color choices into therapeutic practices to help individuals manage emotions and improve well-being.



Individuals can also apply these findings to enhance personal well-being by making informed choices about the colors in their living spaces, clothing, and personal surroundings. They can create environments that foster positive moods and happiness. Additionally, individuals can incorporate color therapy and color awareness into their self-care routines, using specific colors to support desired emotional states. Overall, the research offers potential for enhancing therapeutic interventions and providing individuals with tools to support their mental health.

Limitations

However, the study has limitations. It lacks a short-term scale to measure color preference, and the sample size is relatively modest, potentially limiting the generalizability of findings. The study's geographical restriction to a specific city may also limit the broader applicability of the results. Additionally, the brevity of the study's temporal scope may not capture long-term trends or time-of-day effects. Future research should employ longitudinal designs to explore color preferences over time, investigate potential causal relationships, and measure the effects of colors on moods. Experimental studies can manipulate colors to assess their impact on overall well-being in specific environments.

By recognizing these limitations and conducting further research, we can gain a deeper understanding of the dynamics of color preferences, emotions, and well-being.