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Emotional Responses To Colour In Interior Spaces: The Psychology Of Colour In Residential Interiors: Exploring Emotional And Mood Responses To Interior Design Choices

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Abstract: This study compares the perspectives of general residents and interior design students to examine the emotional reactions that various interior colours elicit in residential settings. A structured Google Form questionnaire was used to gather both qualitative input (subjective emotional interpretations) and quantitative data (mood scales and preference ratings) as part of a mixed-methods approach. Two other groups of participants were regular citizens without professional design backgrounds and interior design students with specialised training in colour theory and spatial design. The objective was to examine how expertise affects the emotional perception of colour in various home spaces, including the living room, bedroom, bathroom, and workstation.

The results show both similarities and differences in how people see colour. When combined with appropriate lighting and texture, white was perceived as uplifting by all groups, however, intensely saturated colours like orange and red were associated with cognitive tiredness and overstimulation. Many people believed that pastel colours were soothing and enlarged the sense of space, particularly in stressful situations. It is noteworthy that students studying interior design had a more strategic and nuanced awareness of the psychological effects of colour, consistently matching their answers to accepted design principles. General inhabitants, on the other hand, displayed more subjective and diverse views, frequently impacted by emotional associations and personal preferences.

Index Terms **-** Aesthetic Perception, Colour Psychology, Cognitive Response, Emotional Reactions, Interior Design, Mood Regulation, Residential Environments, Spatial Awareness, colour theory.

I. INTRODUCTION

Since ancient times, colours have been a part of human life that have altered appearances, emotions, and behaviours among societies. This interest in colours is now even more profound in residential and commercial interior design spaces, with significant new investigations regarding the effects that colour has on wellness, productivity, and quality of life. For this reason, the present study intends to research the psychological and emotional effects of interior colours and analyse their specific influences on residents throughout various types of settings.

A key component of interior design, colour has the power to affect behaviour, perception, and emotional health. The deliberate use of colour can significantly affect how a room is emotionally experienced in residential settings, where people look for comfort, relaxation, and a sense of identity. Beyond its aesthetic worth, colour has psychological significance, prompting reactions that can range from excitation or even worry to peace and contentment. As a result, colour is being used by designers and architects more and more to create emotional ambiances and improve living conditions in homes, rather than only as decoration.

Colour psychology recognizes the relationship and influence of colour on emotions and behaviours in humanity. According to empiricism, colours evoke very distinct emotional effects; some elicit calmness and relaxation while others arouse excitement and aggression. For example, a feeling of liveliness and excitement is characterized by warm colours such as red and orange, while cool colours like blue, green, and so on, are identified with feelings such as calmness and serenity. Neuroscience research also backs these effects because exposure to some specific colour has also been found to cause changes in physiological parameters during the treatment like heart rate, blood pressure, stress level, etc. Meanwhile, perception and effects of colour are perceived as subjective and culture-bound as well as subjective, thereby emphasizing the need for colour psychology to be examined in context.

Colours play a vital role in bringing comfort, utility and personality to the house. For example, when it comes to bedrooms, cool, subdued colours like blue, green, and lavender are preferred. Such hues help in ensuring relaxation, stress reduction, and better sleep. Research shows that blue tones, for instance, bring down heart rates and bring a sense of calmness, thus making them highly preferred in any setting related to rest.

Diner and kitchens are normally splashed with warm colours-red, orange, and bright yellow-which are believed to awaken the appetite and zeal. For instance, red is scantly used in dining areas, for it is a very strong appetite-stimulator. Yellow evokes a cheerful moment and an energizing environment; it brightens the area and stimulates interaction. These often include shades of whites, light greys, or pastels such as aqua or peach to express cleanliness and freshness in addition to that spa-like quality; the choices inspire rejuvenation and relaxation.

According to this paradigm, colours have inherent meanings and can evoke emotional reactions rather than being emotionally neutral. For instance, red is typically linked to enthusiasm or even violence, yellow to optimism and innovation, and blue to peace and trust. The study of colour is very complex since these associations can change based on environmental factors, personal experiences, and cultural context. The purpose of this study is to improve our knowledge of the feelings that different colours arouse in interior spaces, especially in home settings. Houses are incredibly intimate places where people can rest, interact, and express themselves. Because of this, the emotional character of these areas is very important, and one of the most effective yet understated ways to affect how these areas are perceived psychologically is through colour. This study uses colour psychology to investigate how particular colours—like blue, green, yellow, or red—can elicit a variety of emotional states, from stimulation and attention to tranquillity and contentment. This study incorporates psychology as well as important design concepts like harmony, balance, contrast, and spatial perception, which affect how colour interacts with light, furnishings, textures, and materials. The emotional tone of a space can be dramatically changed by the placement, saturation, and proportion of colour; depending on how it is used, the same hue can feel calming or overpowering. Emotional connections with colour are also significantly shaped by cultural factors. White may be connected to grief in some cultures, but it may also represent purity and tranquillity in others. Designing with cultural sensitivity requires an understanding of these variances, especially in increasingly multicultural cultures where homes represent a variety of identities and customs.

II. Research Question

To investigate how different colours used in interior design influence the emotional responses and mood of occupants in residential environments?

III. Aim

The purpose of this study is to examine the emotional effects of colour in interior residential environments, with a particular emphasis on how different shades and tones affect residents' psychological reactions, comfort levels, and mood.

IV. Objectives

i. To explore the psychological impact of various colours and their shades in interior residential settings.

ii. To identify emotional responses, comfort levels, and mood variations associated with different colour applications

in specific home spaces (e.g., living room, kitchen, bedroom).

iii. To collect and analyze primary data through a Google Form questionnaire, focusing on how individuals perceive and emotionally react to colour in their home environments.

iv. To evaluate how demographic factors (such as age, gender, and cultural background) influence emotional responses to interior colour schemes.

v. To examine the relationship between colour temperature (warm vs. cool tones) and perceived psychological comfort in different household areas.

vi. To understand preferences for specific colours in functional spaces (e.g., calming tones in bedrooms, energizing tones in kitchens) and their alignment with emotional needs.

vii. To compare the emotional impact of monochromatic versus multi-colored interior schemes on residents' mood and mental well-being.

V. Scope

The emotional and psychological effects of different colours used in domestic interior design are the main subject of this study. It discusses popular colour schemes and how they are thought to affect psychological reactions, comfort, and mood in particular rooms of the house, like the kitchen, living room, and bedroom. A structured Google Form questionnaire is used to gather information from a wide range of participants in order to learn more about their individual experiences and emotional connections to various colour schemes used in interior design. The results are intended to guide design choices that improve residential settings' well-being.

VI. Literature Review

Design psychology and environmental studies have long focused on the connection between colour and human emotion. Colour in interior spaces has a major impact on inhabitants' emotional moods, cognitive abilities, and general well-being, according to numerous studies. Although warm hues like red, orange, and yellow are frequently associated with emotions of warmth, vitality, and stimulation, they can also cause restlessness or agitation if used excessively. Conversely, cold hues like blue, green, and purple are frequently used in living spaces and bedrooms since they are typically linked to emotional stability, peace, and relaxation. Mane (1996) asserts that colour selections in interior design should be context-specific, taking into account the space's intended use as well as the psychological requirements of its users. The significance of user-focused research in residential design is further supported by study by Kaya and Epps (2004), which indicates that colour perception and emotional response differ based on contextual, cultural, and personal aspects.

The impact of minor changes in brightness, saturation, and shade on occupant reactions has been further investigated by recent developments in environmental psychology. For instance, pastel colours are usually thought of as being soft and peaceful, but high-saturation colours might, depending on the situation, arouse tension or excitement. The intricate relationship between colour dimensions and emotional descriptors has been emphasized by studies by Ou et al. (2004). For example, deep reds may imply intimacy or tension, while specific greens encourage freshness and regeneration.

Table 6. : Some Literature in the context

Databases	Summary of Findings	Research Gap
Google Scholar	Colours influence mood: warm colours energize, cool colours calm (Kaya & Epps, 2004); cultural and personal variables affect perception.	This studies focus specifically on residential interior spaces using real participant feedback.
Science Direct	Colour brightness and saturation levels affect emotional responses; low saturation is linked to calmness (Ou et al., 2004).	Lack of focus on how these findings apply in practical, real-life home settings.
JSTOR	Colour psychology theory emphasizes contextual application; colour-emotion link is consistent but subjective (Mane, 1996).	Limited empirical studies using survey tools to gather direct user experience from different household environments.
Research Gate	Colours affect psychological comfort and space perception; studies highlight need for person-centred design in interiors.	Minimal data from structured surveys assessing occupant perception across specific rooms like kitchen or bedroom.

Recent Studies

i. **Colour-Related Neurological and Physiological Reactions**

The HSV (Hue, Saturation, Value) colour model and the PAD (Pleasure-Arousal-Dominance) emotional framework were used in a 2024 study that was published in Applied Mathematics and Nonlinear Sciences to examine interior colour schemes. The results showed that interior backgrounds with warm, vibrant colours greatly increased occupiers' sense of cosiness and warmth. The significance of brightness and saturation in generating favourable emotional reactions was underlined by the study. Furthermore, studies conducted in virtual reality settings showed that exposure to blue spaces alters brain activity related to emotional processing. This implies that particular hues might affect physiological and psychological states, highlighting the importance of interior colour schemes.

ii. **Contextual and Cultural Factors Affect Colour Perception**

The study "Colourcast: Using Psychology to Create Meaningful Interior Designs" from 2024 examined how individual experiences and cultural backgrounds influence colour preferences and emotional responses. According to the study, cool hues like blue and green encourage rest, while warm hues like red and yellow can boost vitality and creativity. Individual interpretations of these hues, however, differ depending on contextual and cultural circumstances, which emphasises the necessity of customised design strategies.

iii. **Effects of Colour Temperature and Lighting**

A virtual reality study conducted in 2023 evaluated the effects of correlated colour temperature (CCT) and IL luminance on emotional reactions. The mood and comfort levels of participants exposed to different lighting conditions changed, suggesting that colour and lighting have a complex interaction that affects emotional well-being in interior spaces.

VII. METHODOLOGY

Using both quantitative and qualitative methodologies, a mixed-methods research design was used to examine the emotional reactions that various colours evoked in home interior spaces. This approach made it possible to gather a variety of viewpoints from people with different degrees of design expertise and first-hand experience in residential settings.

Design of Research

Through the use of a structured questionnaire intended to gauge emotional reactions to particular colours when used in interior residential settings, the study adopted a survey-based methodology. The purpose of the questionnaire was to collect both objective information (such as mood scales and preference ratings) and subjective.

Interpretations (such as personal experiences and descriptive feedback). A thorough grasp of

How colour affects mood and perception in domestic settings was made possible by this dual approach.

Participants

Two separate participant groups were chosen in order to offer comparative analysis:

i. Students of Interior Design: Due of their scholarly exposure to design theory and colour application, participants from undergraduate and graduate interior design programs were included. It was anticipated that their answers would show a more critical or expert perspective on colour in interior design.

ii. General Residents: To gain an understanding of the emotional influence of interior colours from a non-specialist, everyday standpoint, a survey was conducted among members of the general community who currently reside in residential settings. This group Shed light on how ordinary house residents perceive and understand colour.

VIII. Results and Discussion

Question	Focus Area	Interior Students' Insights	Other Professionals' Insights	Key Comparison/Insight
1	White Interiors	Seen as clean, open, and uplifting (87%); emotional tone enhanced by light/texture	Majority agree (58%); more critical of clinical feel from poor lighting (38%)	Students more confident; others more sensitive to contrast and lighting imbalance
2	Yellow Shades	Pastel = calm, Golden = warm/stimulating; 67% link tones to mood	50% agree with dual mood; more (33%) find deep yellow overwhelming	Designers show deeper tone-specific understanding; non-designers more reactive
3	Saturated Colours	Red disrupts focus (79%); neon and purple also distract	53% cite red; 27% deny colour affects focus	Professionals believe in colour's cognitive effects; others more sceptical
4	Green Shades	Forest green = peace; lime = energetic/distracting	Forest = calm (44%); lime = stimulating (28%)	Both link green to nature, but designers more cautious with bright hues
5	Saturated Orange	Energizing but overbearing over time (57%)	Similar concern (52%); higher anxiety sensitivity (24%)	Agreement on short-term stimulation, long-term fatigue
6	Pastel Hues	Promote calm, openness (71%); some concern over immaturity	59% agree; more subjective variation (29%)	Strong agreement, but non-designers more divided
7	Work-from-Home Colours	Neutrals (61%) and blue-greens for focus/creativity	Neutrals (53%), blue-greens (32%); 15% doubt impact	Broad agreement; designers slightly more confident
8	Dark Interiors	Sophisticated with good lighting (68%); some heaviness concern	61% agree; slightly more report oppressive feel (16%)	Subjectivity noted in both; well-lit darkness appreciated overall
9	Spa-like Bathrooms	Warm neutrals preferred (55%); also cool hues for calm	49% agree; 27% favour cool tones; lighting/texture prioritized	Lighting and texture seen as vital by both groups

Question	Focus Area	Interior Students' Insights	Other Professionals' Insights	Key Comparison/Insight
10	Gary Interiors	Sophisticated (59%); context and accents key	51% agree; more concern about dullness (18%)	Shared value for sophistication; designers more strategic with accents

Comparing interior designers with other professionals reveals important differences as well as commonalities in the way colour psychology is viewed and used in spatial design. Although both groups agree that colour has a big impact on how interior spaces feel, are perceived, and operate, their interpretations and emphases range greatly because of training, exposure, and priority disparities. When it comes to the practical use of colour, interior designers exhibit a great degree of confidence. Their answers always demonstrate a methodical comprehension of how particular colour schemes affect spatial dynamics and affective results. For example, muted blue-greens are prized for their harmony of creativity and focus, while pastels and other gentle colours are preferred for their perceived capacity to enlarge a room and inspire serenity.

IX. CONCLUSION

Different but complementary viewpoints on the psychological function of colour in interior spaces are shown by comparing interior designers with other specialists. With a foundation in design theory and real-world application, interior designers view colour as a strategic component that is purposefully employed to improve aesthetic coherence, emotional tone, and spatial usefulness. Whether through vibrant accents, soothing muted tones, or the subtle use of lighting to accompany darker palettes, they demonstrate confidence in using colour to create particular atmospheres. However, other experts typically view colour through a more subjective and experiential prism. Rather than being based on organized design principles, their answers frequently reflect emotional responses and comfort levels. They acknowledge the psychological impact of colour, but they place a greater emphasis on contextual flexibility, individual diversity, and sensory sensitivity than designers do. Fundamental ideas shared by both groups include the calming effect of gentle colours, the significance of lighting, and the capacity of well-balanced palettes to elevate mood. However, while other professionals react to colour in more varied and intuitive ways, interior designers base their selections more on colour theory. There are numerous real-world uses for these results in home architecture. By promoting the use of pre-design consultations to better understand a client's emotional associations with colour, they help interior designers comprehend the importance of fusing technical colour theory with user-focused personalization. Using these ideas in design education can assist aspiring professionals in prioritizing psychological well-being over aesthetics. According to the findings, homeowners and non-designers can make intuitive and customized color selections that suit their emotional demands, including using warm hues to create stimulating kitchens or soft neutrals to create restful bedrooms. Understanding different colour perceptions in shared or multigenerational homes can help choose an inclusive palette that takes into account each resident's sensory comfort. This knowledge can also be applied by architects and lighting designers to strategically illuminate spaces to improve colour perception.

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