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## The Psychology of Colours in Interior Spaces

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### Abstract

Colour plays a fundamental role in interior design, influencing not only the aesthetic appeal of residential spaces but also the psychological well-being, mood, and productivity of occupants. While extensive research exists on the psychological effects of colours in commercial and public spaces, the application of colour psychology in residential interiors remains underexplored. This study addresses this gap by investigating how specific colour palettes impact emotional and cognitive states in homes. Using a structured online questionnaire, data were collected from 30 participants across diverse age groups and demographics. The survey explored preferences for colour schemes in various rooms, including bedrooms, living rooms, workspaces, and bathrooms, as well as their emotional associations with warm, cool, neutral, and earth tones.

The findings reveal distinct patterns: neutral tones are highly favoured for relaxation spaces, cool colours for functional areas, and warm hues for social zones. Demographic differences emerged, with seniors preferring soft pastels and children favouring vibrant colours. While most participants were open to modifying their home colours based on psychological research, practical barriers such as cost and effort were noted.

This research underscores the need for personalized and context-specific colour applications to optimize residential spaces for comfort, productivity, and well-being. It also calls for further exploration of cultural influences and the long-term impacts of colour on mental health.

**Keywords:** Colour Psychology, Interior Design, Mood and Productivity, Emotional and Cognitive Impact, Mental Well-being

### Introduction

Color is an integral element of interior design, shaping not only the visual appeal of a space but also influencing the emotions, behaviors, and well-being of its occupants. The field of color psychology delves into these effects, exploring how different hues and palettes affect human perception and mental states. In residential interiors, where individuals seek comfort, productivity, and relaxation, the application of color psychology holds immense potential for creating spaces that support diverse psychological needs. Research has shown that warm colors such as red and yellow evoke energy and stimulation, making them ideal for active or social spaces, while cooler hues like blue and green promote calmness and relaxation, suitable for bedrooms and study areas (Birren, 2016; Elliot & Maier, 2014) <sup>[1, 2]</sup>.

Despite significant advancements in understanding color's

psychological impact, there remains a gap in applying these insights to residential environments. Existing studies often focus on commercial or public spaces, leaving the specific emotional and cognitive needs of homes underexplored. Moreover, cultural and individual differences further complicate universal recommendations, highlighting the need for nuanced approaches. This research seeks to bridge that gap by examining how distinct color palettes influence mood, productivity, and mental well-being in residential settings. Drawing from foundational theories by Birren and recent findings in environmental psychology, the study aims to provide practical applications tailored for home interiors. By analyzing the effects of different color palettes, exploring color associations, and reviewing prominent psychological theories, this study offers actionable guidelines for designers and homeowners. It emphasizes the

potential of color psychology to optimize residential spaces, enabling the creation of environments that harmonize aesthetic appeal with emotional and functional needs. Ultimately, this research contributes to a deeper understanding of how thoughtful color choices can enhance the quality of life within homes.

## Materials and Methods

### Literature Review

#### Case Study 1: The Transformative Impact of Color in Residential Interiors

### Overview

This case study examines a project undertaken by Adamick Architecture that highlights how strategic use of color in interior design can influence mood, behavior, and spatial perception. The study focuses on a living room transformation utilizing a split-complementary color scheme, emphasizing the psychological and functional impact of carefully selected hues.

### Key Insights

**Color Selection and Emotional Resonance:** The design team used a soft teal for the walls, complemented by coral and muted peach accents. This combination created a balance of warmth and energy, enhancing the room's inviting and vibrant atmosphere without overwhelming the occupants.

**Application of Color Theory:** The project demonstrated the power of color relationships, leveraging complementary tones to harmonize the space. The use of soft teal as a dominant shade added a sense of calm, while coral and peach introduced subtle vibrancy.

**Psychological Impact:** The teal walls promoted relaxation and focus, aligning with the calming qualities associated with blue-green hues. Coral and peach, as warm tones, provided a welcoming touch, encouraging social interaction and warmth within the space.

**Spatial Perception:** The light hues visually expanded the room, making it feel airy and open. At the same time, the darker coral accents created depth and visual interest, ensuring the space felt grounded.

### Results

The redesigned living room successfully balanced aesthetic appeal with psychological functionality. Post-renovation feedback indicated increased use of the space for social gatherings, with occupants reporting improved mood and a sense of comfort. The project underscored the importance of using color to tailor interior environments to desired emotional and functional outcomes. By integrating principles of color psychology with practical design considerations, Adamick Architecture demonstrated how strategic color application can elevate residential interiors, creating spaces that resonate both emotionally and visually [3].

**Case study 2:** Impact of Color Psychology in Interior Design

### Overview

This study explores how color psychology is applied in interior design, based on insights from experts and examples shared by Homes & Gardens. It examines how specific colors affect moods and behaviors, guiding choices in residential spaces to promote well-being.

### Key Insights

**Calming Colors for Restful Spaces:** Shades like blue and green evoke calmness, making them ideal for bedrooms and living rooms. Their connection to nature fosters relaxation and trust.

**Energizing Hues for Activity Areas:** Warm tones like yellow and orange boost energy and positivity, commonly used in kitchens and playrooms.

**Individual Preferences and Context:** Personal experiences influence color perception. For instance, while some find light spaces calming, others might see them as clinical. Seasonal changes also impact how colors are perceived.

**Self-Expression Through Color:** Designers emphasize the psychological empowerment from selecting colors that reflect individuality, linking aesthetics to mental health.

### Results

Designers leveraging color psychology create spaces that not only serve functional purposes but also enhance emotional states. For example, a blue-painted bedroom promotes better sleep, while a vibrant orange kitchen stimulates creativity and interaction. Clients report increased satisfaction and harmony in homes tailored to their psychological preferences. Incorporating color psychology into design ensures spaces resonate emotionally with inhabitants, fostering productivity, relaxation, or energy as required. Understanding the emotional impact of colors allows for personalized and effective design strategies [4].

**Research Paper 1:** Faber Birren's research in "Color Psychology and Color Therapy"

It explores how specific colors like red stimulate activity, while blue promotes calmness. This foundational study is essential for understanding how individual colors influence mood and how these principles apply to residential interiors [1].

**Research Paper 2:** Journal of Environmental Psychology

They published a paper that investigates the impact of color on mental well-being, focusing on how color selections in interior design impact stress and relaxation levels. This paper provides insights on designing personalized residential spaces to enhance emotional comfort, resonating with your research's objectives [5].

### Study Design

This research employs a cross-sectional survey design to investigate the psychological effects of colors in residential interiors. The primary data collection tool was a structured online questionnaire created using Google Forms, designed to gather insights into participants' perceptions, preferences, and emotional responses to various color palettes in their

home environments structured with closed-ended questions to facilitate objective analysis. The questionnaire consisted of 20 multiple-choice questions targeting various aspects of color psychology in residential spaces. Questions were designed to address themes such as mood regulation, productivity enhancement, relaxation, and emotional well-being. The survey included demographic information (age group and occupation) to analyze trends across different populations. The options for each question were carefully crafted based on established theories and prior research in color psychology, ensuring relevance and comprehensiveness.

### Study Population

Participants were selected using a convenience sampling method, targeting individuals from diverse age groups, occupations, and living environments. A sample size of 30 participants was estimated to ensure diverse responses and statistical significance. The demographic section of the questionnaire categorized respondents into four age groups: Below 20, 20–30, 30–50, and Above 50, along with their occupation to capture a broad spectrum of experiences and

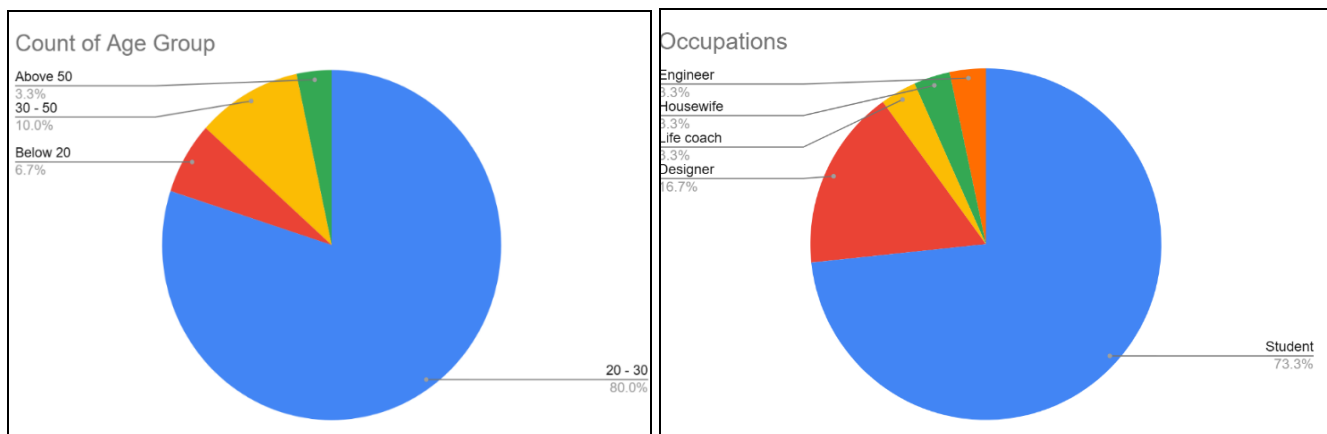
preferences. The target population included individuals residing in urban and suburban residential settings.

### Data Collection Procedure

The questionnaire was distributed digitally, with participants given a week to respond. Each question was crafted to address specific research objectives- Psychological effects of colour on mood, relaxation, and productivity. Colour preferences in specific rooms (e.g., bedrooms, workspaces, living areas). Perceptions of colour themes such as warm, cool, neutral, earth tones, and their influence on spatial ambiance.

### Data Analysis

The collected data was analyzed statistically to identify trends and correlations between color preferences and psychological effects. Responses were grouped based on key variables (e.g., age group, functional area) to assess variations in preferences and associations. Frequency distributions, cross-tabulations, and descriptive statistics were employed to interpret the data.



**Fig 1:** Age group and Occupation of Population

### Results and Discussion

The results from the survey, consisting of 30 participants from diverse age groups, provide key insights into how different colour schemes and interior design elements affect the mood, productivity, and overall well-being of individuals in residential spaces. The data reflects preferences and psychological associations with colours in various areas of the home, such as living rooms, bedrooms, study areas, and playrooms. The findings are structured into thematic categories to discuss specific observations and their implications.

#### Impact of Colors on Mood

Participants displayed diverse responses regarding the psychological impact of colours. A majority (60%) reported that the right colours create a relaxing atmosphere, emphasizing the calming effects of well-chosen palettes. Notably, 27% of respondents indicated that colours made them feel neutral, suggesting that while colour plays an important role, its impact may diminish if other elements such as lighting and decor are neutral or muted. A smaller subset (6%) reported that certain colours sometimes caused stress. These findings highlight the dual role of colour in

mood regulation-while many colours soothe, the intensity or mismatch of hues can contribute to unease in certain individuals.

#### Color preferences in Living Spaces

The bedroom, often associated with rest and recovery, showed a clear preference for neutral shades (51%), followed closely by cool colours such as blue and lavender. These colours are known for their calming effects, making them ideal for promoting relaxation. Earth tones were preferred by 20% of respondents, showcasing their connection to warmth and groundedness in private spaces. In contrast, living rooms emerged as spaces where respondents preferred a combination of warm and cool tones (53%). This preference aligns with the function of living rooms as both social and relaxation zones, requiring colours that strike a balance between energy and calm. Neutrals and warm tones were also popular, reinforcing their versatility in accommodating diverse social and aesthetic needs.

#### Color preferences in Functional Spaces

Colours in workspaces and study areas revealed a distinct inclination toward neutral (47%) and cool tones (33%).

These colour groups have been widely associated with enhanced focus, reduced distractions, and cognitive clarity, making them optimal for spaces that require prolonged concentration. Participants noted that such colours provided a calm environment conducive to productivity, while warmer or more vibrant tones were rarely favoured due to their stimulating effects.

In children's study spaces, there was an equal split between preferences for cool tones and neutral shades, with muted earth tones ranking slightly lower. This suggests that functionality and comfort are prioritized when designing spaces for learning, with an emphasis on reducing overstimulation.

### Color preferences in Bathroom Spaces

For bathrooms, fresh, cool tones like blue and aqua were overwhelmingly preferred, reflecting their association with cleanliness and serenity. Neutral tones such as white and beige were also popular, aligning with the minimalistic approach often favoured in contemporary bathroom design.

### Furniture and Flooring

Furniture colour preferences leaned heavily toward natural and neutral tones (63%), underscoring a desire for timeless, adaptable aesthetics that complement various styles of decor. Participants favoured these tones for their ability to create harmonious and less visually overwhelming interiors. Regarding flooring, responses were mixed. While some participants found patterned or multi-coloured flooring lively and playful (33%), others (43%) deemed it overwhelming, especially in spaces meant for relaxation. This division suggests that flooring, a significant visual element, requires careful consideration to balance energy and comfort within a room.

### General Color Associations

Contrasting colour schemes in kitchens were polarizing, with 40% of respondents appreciating their modern and dynamic appeal, while others found them visually chaotic. Similarly, while light shades were predominantly perceived as refreshing and calming, a minority of participants felt they lacked character, underscoring the varied emotional responses to minimalistic palettes.

Monochromatic rooms were seen by most participants as peaceful and harmonious, yet a significant subset (23%) found them dull or uninspiring. These findings reiterate the need for balance in design—while simplicity can promote calmness, excessive uniformity may fail to engage occupants emotionally.

Dark-coloured accent walls elicited mixed reactions. While many respondents appreciated their sophistication, others expressed concerns about such walls making spaces feel smaller or overwhelming. This observation highlights the subjective nature of colour perception and the importance of context, such as room size and natural lighting, in determining the success of accent features.

### Colors for Specific Demographics

Spaces tailored for seniors highlighted a strong preference for soft pastel tones and warm, comforting colours. These palettes were valued for their ability to evoke feelings of

safety and relaxation, aligning with the psychological need for soothing and familiar environments.

Children's spaces favoured bright, stimulating colours (46%), reflecting their role in fostering energy and creativity. However, a notable portion (33%) preferred softer pastels, indicating a demand for comfort alongside vibrancy in environments meant for younger occupants.

### Discussion

The findings from this survey affirm several key principles of colour psychology and their practical application in residential design. Neutral tones, such as gray, beige, and white, are overwhelmingly preferred for spaces designed for relaxation, such as bedrooms and living rooms, reflecting their ability to create peaceful and adaptable environments. Cool colours, including blues and greens, were favoured for workspaces and areas requiring focus, consistent with research suggesting that these hues reduce anxiety and enhance cognitive performance. The responses also highlight the significance of warm tones (e.g., red, orange) in social spaces, such as living and dining rooms, where energy and sociability are prioritized. These colours are known to increase interaction and stimulate appetite, making them ideal for spaces designed for social engagement.

Interestingly, the findings also suggest that personal preferences, demographic factors, and the intended function of the space all play critical roles in the decision-making process when selecting colours. For example, older adults preferred softer, more comforting tones, such as pastels and warm colours, which are associated with warmth, familiarity, and relaxation. In contrast, children's spaces favoured bright and stimulating colours, supporting the idea that colours can influence both emotional and cognitive development.

The survey revealed that 74% of respondents were open to modifying their home colours if research indicated a potential improvement in well-being although cost was a barrier. The study further underscores the potential for colour psychology to enhance well-being and productivity in residential environments, as reflected in the participants' willingness to adapt their home colours based on research-backed evidence. Future studies could explore the long-term effects of colour changes on mental health and overall quality of life, as well as the impact of cultural and socio-economic factors on colour preferences.

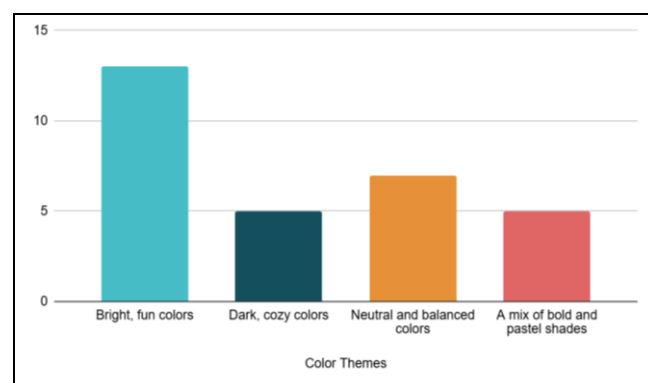
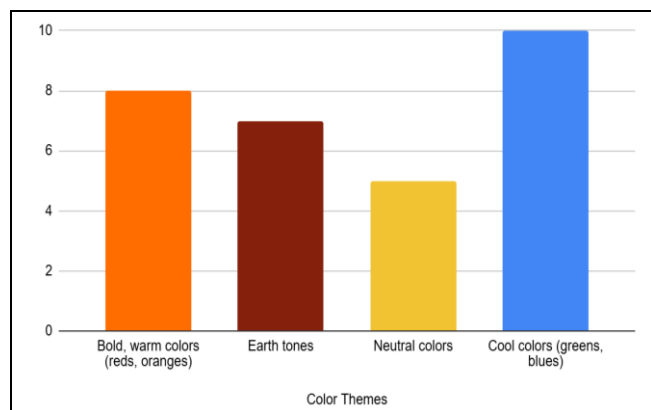
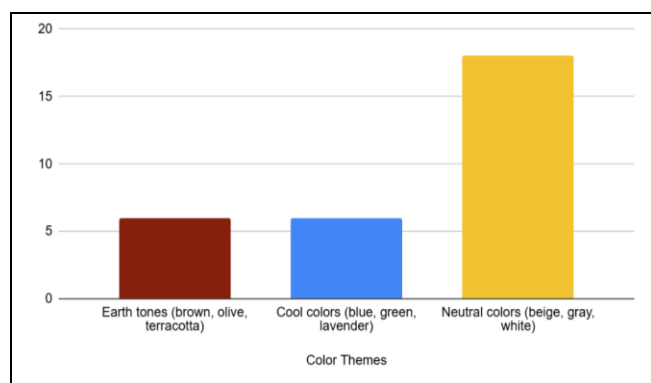
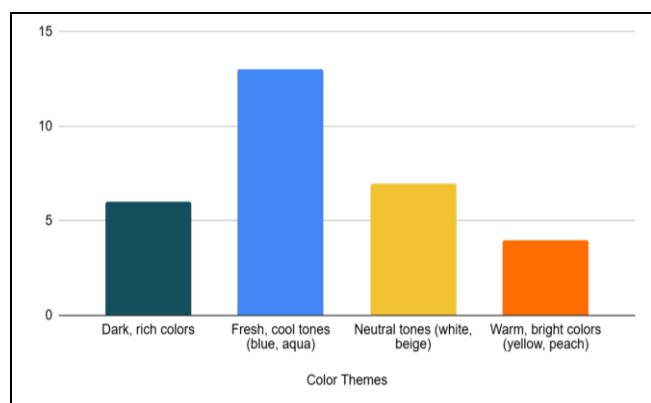
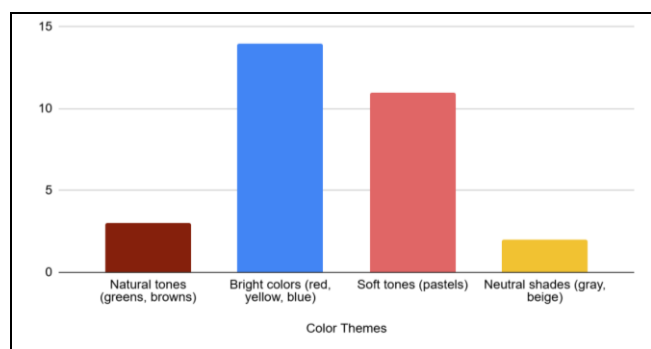
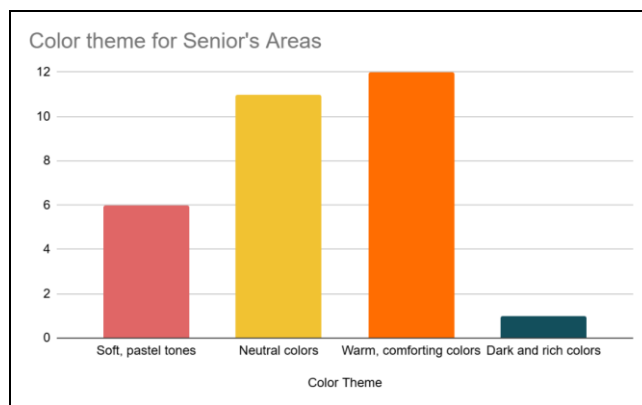


Fig 2: Color Theme for Entertainment Areas

**Fig 3:** Color Theme for Dining Rooms**Fig 4:** Color Theme for Bed Rooms walls**Fig 5:** Color Theme for Bath Rooms**Fig 6:** Color Theme for Children's Areas**Fig 7:** Color Theme for Senior's Areas

## Conclusion

This study demonstrates the pivotal role of colour in shaping the psychological, emotional, and functional dynamics of residential spaces. The findings reveal that neutral tones, such as beige and gray, are overwhelmingly preferred for bedrooms and living rooms, reflecting their ability to create calming and adaptable environments. Cool colours, including blues and greens, were favoured in workspaces for their association with focus and reduced anxiety, while warm tones like red and orange found popularity in social spaces, fostering energy and interaction. Additionally, personal preferences and demographic factors emerged as significant determinants, with seniors gravitating toward soft, comforting tones and children's spaces leaning toward bright, stimulating hues.

The results highlight the dual influence of universal colour principles and individual needs, underscoring the potential of tailored colour palettes to enhance well-being and productivity. However, challenges such as cost and practicality were cited as barriers to implementing changes. This underscores the importance of making evidence-based design solutions more accessible and actionable.

This research contributes to bridging the gap between theoretical colour psychology and its practical application in home interiors. By offering insights into the nuanced preferences of diverse groups, it provides a foundation for creating residential spaces that harmonize aesthetic, emotional, and functional priorities. Future studies should explore the cultural and long-term psychological impacts of colour in residential environments, further enriching this field of study.

## Compliance with ethical standards

Statement of informed consent Ethical approval was obtained for the study. Participants were informed about the research purpose and assured anonymity and confidentiality of their responses. Informed consent was obtained at the start of the survey, and no identifying information was collected.

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