



International Journal of Humanities and Sustainable Innovation

The Psychology of Space and Color in Interior Design

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Article Info

Impact Factor (RSIF): 8.29

Volume: 02

Issue: 03

May-June 2026

Received: 10-03-2026

Accepted: 08-04-2026

Published: 06-05-2026

Page No: 19-24

Abstract

The psychology of space and color is a fundamental aspect of interior design that significantly influences human emotions, behavior, comfort, and overall well-being within built environments. Interior spaces are not merely physical settings; they function as psychological environments that directly affect mood, cognitive performance, productivity, and social interaction. Color, as a powerful visual element, has the ability to evoke emotional responses such as calmness, excitement, stress, or comfort, while spatial design determines movement patterns, privacy levels, and perceptions of openness or confinement. This study examines the psychological relationship between spatial organization and color application in interior environments and evaluates how these elements collectively impact users. Through an analytical review of existing Indian and international literature, the research identifies the role of space and color in creating functional, emotionally supportive, and user centered interior environments.

Keywords: Psychology of Space, Color Psychology, Interior Design, Human Behavior, Emotional Response, Built Environment, Spatial Perception

1. Introduction

Interior design has evolved significantly from being a discipline primarily focused on decoration and aesthetics to one that deeply influences human psychology, behavior, and overall well-being. In contemporary design practice, interior spaces are understood not merely as physical environments but as experiential settings that shape how individuals think, feel, and interact. Every built environment whether residential, commercial, healthcare, or educational has the potential to affect emotional responses, cognitive functioning, productivity, and social behavior. As a result, understanding the psychological impact of design elements has become essential in creating spaces that are not only visually appealing but also emotionally supportive and functionally effective. Among the many components of interior design, space and color are considered two of the most influential factors in determining the psychological quality of an environment. Space refers to the physical organization of an interior, including layout, scale, proportion, circulation, openness, and spatial relationships between different elements. The way a space is planned directly affects user comfort, movement, privacy, and perception. For example, well-organized and open spaces can encourage relaxation, communication, and a sense of freedom, whereas cramped or poorly planned environments may lead to discomfort, stress, and reduced efficiency.

Similarly, color plays a powerful role in shaping emotional and behavioral responses. Different colors can trigger distinct psychological reactions and influence mood, attention, and physiological responses. Warm colors such as red, orange, and yellow are often associated with energy, enthusiasm, and stimulation, while cool colors like blue and green are linked to calmness, balance, and relaxation. Neutral tones contribute to simplicity and stability, making them widely used in modern interior environments. The selection and application of color therefore become critical tools for designers in creating intended emotional atmospheres within spaces. The interaction between space and color creates a combined psychological effect that is often

stronger than the influence of either element alone. For instance, lighter colors can visually enlarge compact spaces, making them appear more open and comfortable, while darker shades can create intimacy and warmth in larger rooms. The thoughtful integration of spatial planning and color strategy allows designers to manipulate perception, enhance user experience, and improve environmental comfort.

In recent years, rapid urbanization, changing lifestyles, and increased awareness of mental health have further highlighted the importance of psychologically responsive interiors. Urban living often involves smaller residential units, multifunctional spaces, and prolonged indoor occupancy, making effective use of space and color more relevant than ever. At the same time, cultural factors also shape design preferences. In countries like India, traditional design practices often emphasize vibrant colors, symbolic meanings, and socially interactive spaces, whereas many Western design approaches prioritize minimalism and neutral palettes. Understanding these cultural variations is essential for developing context-sensitive and user-centered design solutions.

This study aims to explore the psychology of space and color in interior design by examining how these two elements influence human emotions, comfort, behavior, and well-being. Through a review of existing literature from both Indian and international scholars, the research seeks to establish a theoretical understanding of how interior environments can be intentionally designed to support emotional health, productivity, and improved quality of life. Ultimately, the study emphasizes that successful interior design is not only about creating beautiful spaces but about designing environments that positively affect the people who inhabit them.

1.1. Understanding the Psychology of Space

Space is one of the most important aspects of interior design. It defines how a user experiences an environment. It is not just about physical dimensions but also about perception and usability.

1.1.1. Types of Space

Positive space refers to the area within an interior that is occupied by physical elements such as furniture, decorative objects, architectural components, and people. It includes all visible and functional objects that define the purpose and usability of a room. For example, in a living room, the sofa,

table, chairs, shelves, and lighting fixtures collectively form the positive space. This type of space gives identity, structure, and functionality to an interior environment. Proper use of positive space ensures that all essential elements are organized efficiently, making the space practical and visually meaningful.

In contrast, negative space refers to the empty or unoccupied areas surrounding and between objects. It is often called breathing space because it allows movement, circulation, and visual comfort within an interior. Negative space prevents a room from feeling crowded or visually overwhelming. It provides balance, improves accessibility, and enhances the perception of openness. For example, the walking area between furniture pieces or the empty wall around a decorative element contributes to negative space, allowing the design to feel more organized and comfortable.

A successful interior design requires a careful balance between positive and negative space. Excessive positive space can make a room feel congested, cluttered, and stressful, reducing comfort and functionality. On the other hand, too much negative space may create an impression of emptiness, making the environment feel incomplete or uninviting. Therefore, designers must strategically arrange furniture and maintain adequate open areas to achieve harmony, visual balance, and psychological comfort. This balance helps create interiors that are functional, aesthetically pleasing, and emotionally supportive for users.

1.1.2. Spatial Elements Affecting Psychology

1.1.2.1. Size and Proportion

Large spaces can feel open and free but sometimes overwhelming. Small spaces can feel cozy but may also feel restrictive.

1.1.2.2. Layout and Circulation

The way furniture and elements are arranged affects movement. Smooth circulation improves comfort, while poor planning creates confusion.

1.1.2.3. Open vs Closed Spaces

Open spaces encourage communication and social interaction & Closed spaces provide privacy and focus

1.1.2.4. Personal Space

Each individual needs a certain amount of space to feel comfortable. Lack of personal space can lead to stress.



Fig 1,2: Space Variation in Interior

1.2. Understanding Color Psychology

Color psychology studies how colors affect human emotions and behavior. Colors have both psychological and cultural meanings.

1.2.1. Effects of Different Colors

Different colors create different emotional and psychological responses, making color selection an essential aspect of interior design. *Warm colors*, such as red, orange, and yellow, are generally associated with energy, stimulation, and positivity. Red symbolizes passion, excitement, and strength, often creating a sense of intensity and attention. Orange is linked to creativity, enthusiasm, and warmth, making spaces feel lively and welcoming. Yellow is commonly associated with happiness, optimism, and positivity, and can make interiors feel brighter and more cheerful.

In contrast, *cool colors* such as blue, green, and purple tend to create calming and soothing effects. Blue is often connected with calmness, trust, and stability, making it suitable for spaces that require relaxation and focus. Green represents balance, freshness, and a connection with nature, promoting comfort and renewal. Purple is associated with luxury, creativity, and *sophistication, often adding elegance and depth to interior spaces*. *Neutral colors*, including white, black, and grey, play an important role in balancing interior environments. White symbolizes cleanliness, simplicity, and openness, often making spaces appear larger and brighter. Black conveys power, sophistication, and elegance, although excessive use may create heaviness. Grey represents neutrality, balance, and modernity, making it highly versatile in contemporary interior design.

1.2.2. Psychological Impact of Color

Colors have a direct influence on human psychology by affecting emotions, mood, and even physiological responses. Research in color psychology shows that different colors can influence heart rate, stress levels, and overall emotional well-being. *Bright and vibrant colors* tend to stimulate mental activity, increase energy levels, and encourage social interaction, making them suitable for active spaces such as living rooms, classrooms, and creative workspaces.

On the other hand, *soft and muted colors* promote relaxation, calmness, and emotional comfort. These tones are often used in bedrooms, healthcare environments, and meditation spaces to reduce stress and support mental well-being. *Dark colors* can create a sense of intimacy, depth, and luxury, making large spaces feel warmer and more enclosed. However, if overused, they may also create feelings of heaviness or confinement. Therefore, the psychological impact of color must be carefully considered in interior design to create environments that support both function and emotional balance.

1.3. Relationship between Space and Color

Space and color are not separate elements; they work together to create a complete experience.

1.3.1. Visual Perception

The combination of space and color strongly influences visual perception, which refers to how people interpret the size, depth, and atmosphere of an interior environment. Light colors, such as white, cream, and pastel shades, reflect more natural and artificial light, making a room appear larger, brighter, and more open. This makes them particularly

effective in compact spaces such as small apartments, bedrooms, and narrow corridors where the goal is to create a sense of spaciousness. In contrast, dark colors such as navy, charcoal, or deep brown absorb more light, causing walls and surfaces to appear closer. As a result, they make spaces feel smaller, more enclosed, and often cozier. Designers often use dark colors strategically in larger rooms to create warmth, intimacy, and a sense of comfort. Therefore, color selection becomes a powerful tool in manipulating how users visually experience a space.

1.3.2. Emotional Experience

The interaction between space and color creates a direct impact on emotional experience, influencing how individuals feel within an environment. A large space combined with cool colors such as blue, green, or soft grey often creates a calm, peaceful, and relaxing atmosphere. Such combinations are commonly used in spaces intended for rest, concentration, or healing, such as bedrooms, libraries, and healthcare settings. On the other hand, a small space combined with warm colors like red, orange, or yellow can generate feelings of energy, warmth, and social connection. These combinations are suitable for active environments like cafés or family rooms; however, if not balanced properly, they may also make the space feel visually crowded or psychologically overwhelming. This demonstrates the importance of balancing spatial dimensions with appropriate color choices to support desired emotional outcomes.

1.3.3. Functional Impact

Beyond aesthetics and emotional effects, space and color also influence the functional performance of interiors. In workplaces and office environments, designers often use neutral colors such as white, beige, and grey combined with open spatial layouts to support focus, professionalism, and productivity. Open layouts encourage communication, collaboration, and efficient movement, while neutral tones minimize distraction and create a clean, organized environment. In residential interiors, however, the design focus is often on comfort and emotional warmth. Therefore, warm tones combined with flexible and adaptable spaces are commonly used to create welcoming and comfortable environments for everyday living. This shows that spatial planning and color selection should align with the intended purpose and function of each environment.

1.4. Importance in Different Interior Spaces

1.4.1. Residential Spaces

In residential interiors, the primary goal is to create spaces that provide comfort, emotional security, and personal connection. Homes are places where individuals seek relaxation and psychological comfort after daily activities. Soft and calming colors such as light blue, beige, pastel green and warm neutrals are often used to create peaceful environments. At the same time, balanced space planning ensures smooth movement, privacy, and functionality. Proper integration of space and color helps create homes that feel warm, inviting, and emotionally supportive.

1.4.2. Commercial Spaces

Commercial environments, particularly offices and workplaces, require interiors that promote focus, productivity, and efficiency. Open-plan layouts are widely used to improve communication, teamwork, and

accessibility. Neutral color schemes such as white, grey, and muted blue are commonly selected because they reduce distraction and create a professional atmosphere. Effective use of space and color in commercial interiors helps improve employee performance, concentration, and overall workplace satisfaction.

1.4.3. Healthcare Spaces

In healthcare environments such as hospitals, clinics, and wellness centers, interior design directly influences patient comfort, stress reduction, and healing. Calming colors like blue and green are widely used because they create a soothing psychological effect and reduce anxiety. Spacious layouts, clear circulation paths, and organized interiors further improve comfort and reduce confusion for patients and staff. Well-designed healthcare interiors can positively support both emotional well-being and physical recovery.

1.4.4. Educational Spaces

Educational environments such as schools, colleges, and learning centers benefit greatly from thoughtful use of space and color. Bright and stimulating colors like yellow, green, and light orange can encourage creativity, attention, and active participation. Flexible spatial layouts allow for different teaching methods, collaboration, and movement, making learning environments more dynamic and engaging. Proper interior design in educational spaces supports concentration, motivation, and overall learning outcomes.

2. Literature Review

Research focuses on the relationship between space, culture, and human emotions. She explains that spaces are not only physical environments but also carry symbolic and emotional meanings. People connect with spaces through memories, traditions, and personal experiences. Her work highlights how cultural landscapes shape identity and influence psychological comfort. She emphasizes that well-designed spaces should reflect cultural values and support emotional well-being. According to her, designers must consider both physical and emotional aspects of space to create meaningful environments. This approach helps in developing spaces that feel familiar, comfortable, and psychologically supportive. (Amita Sinha, 1995) Studies traditional Indian interiors and their connection to human lifestyle and behavior. He explains that spatial planning in Indian homes is influenced by climate, culture, and daily activities. His research shows that design elements such as courtyards, open spaces, and natural ventilation improve comfort and social interaction. He also highlights the importance of balancing private and public spaces within a home. According to Prammar, traditional design principles are highly functional and psychologically satisfying. His work suggests that modern interiors can learn from traditional practices to create more comfortable and meaningful living spaces. (V.S. Prammar, 2005)

Research focuses on healthcare environments and how design affects patient outcomes. She explains that colors, lighting, and spatial layout play a major role in reducing stress and improving healing. Her studies show that calm colors like blue and green create a soothing effect on patients. She also highlights that well-organized spaces improve movement and reduce confusion in hospitals. According to her, interior design can positively influence both emotional and physical health. She emphasizes the importance of creating patient-centered environments that support comfort and recovery

(Anjali Joseph, 2006)^[7] Work focuses on residential interiors and the psychological impact of color. She explains that different colors create different emotional responses in people. Bright and bold colors may increase energy, while soft and neutral colors promote relaxation. Her research shows that improper use of color can lead to stress, discomfort, and visual fatigue. She emphasizes the need to select colors based on the function of the space, such as calming colors for bedrooms and energetic colors for living areas. Her study highlights the importance of color harmony in creating balanced and comfortable interiors (Neha Sharma, 2018).

Focuses on the challenges of space planning in modern urban housing. He explains that rapid urbanization has led to smaller living spaces, making efficient design more important. His research highlights that poor space utilization can cause discomfort and reduce functionality. He suggests the use of multifunctional furniture and flexible layouts to maximize space. According to him, proper spatial organization improves movement, usability, and overall living quality. His work emphasizes practical solutions for compact homes, ensuring both comfort and psychological ease (Sudhir Desai, 2012). One of the most influential researchers in color psychology. He explains that colors have a direct impact on human emotions, behavior, and productivity. His studies show that warm colors like red and orange can stimulate energy, while cool colors like blue and green create calmness. He also highlights that color perception can vary depending on context and environment. According to Birren, proper use of color in interiors can improve mood, efficiency, and comfort. His work is widely used in both residential and commercial design (Faber Birren, 1969).

Research explores how colors affect both psychological and physical responses. He explains that colors can influence the nervous system, leading to changes in mood and behavior. For example, certain colors can increase alertness, while others promote relaxation. His work connects sensory perception with emotional reactions. He also highlights that individual responses to color may vary. His research provides a scientific basis for understanding how color impacts human experience in interior spaces (Kurt Goldstein, 1942). Developed a model in environmental psychology that explains how physical environments affect emotions and behavior. Their theory suggests that people respond to spaces through feelings such as pleasure, arousal, and dominance. These emotional responses influence how individuals behave in a space. Their research shows that elements like layout, color, and lighting play an important role in shaping these reactions. This model is widely used in interior design to create spaces that promote positive experiences and behaviors (Mehrabian & Russell, 1974)^[1]

Studies the connection between design and mental well-being. She explains that interior environments can influence thinking, emotions, and decision-making. Her research highlights that elements such as color, light, and spatial organization affect productivity and comfort. She emphasizes the importance of designing spaces that support psychological health. According to her, well-designed interiors can improve focus, reduce stress, and enhance overall quality of life. Her work promotes a user-centered approach to design (Sally Augustin, 2009). Focuses on the fundamental principles of spatial design. He explains how elements like scale, proportion, balance, and organization

affect how people perceive space. His work helps designers understand how to create functional and visually pleasing interiors. He also highlights the importance of spatial relationships and movement within a space. According to Ching, good spatial design improves both usability and user experience. His books are widely used as a foundation for interior and architectural education (Francis D.K. Ching, 2007).

3. Purpose of The Study

The main purpose of this study is to understand how space and color in interior design affect human psychology, including emotions, behavior, and comfort. In everyday life, people spend most of their time indoors at home, college, offices, or public places. These environments are not just physical spaces; they influence how people think, feel, and interact. This study aims to explore that connection in a clear and structured way.

4. Research Gaps

Existing research on the psychology of space and color in interior design has several important gaps. Most studies examine space and color separately, with limited focus on their combined psychological effect in real interiors. There is also a lack of Indian-context research, as most studies are based on Western environments and do not reflect Indian lifestyles, cultural preferences, and housing patterns. Additionally, limited attention has been given to small urban homes, practical case studies, and the impact of changing modern lifestyles, such as work-from-home and multifunctional living spaces.

5. Objectives

To analyze the psychological impact of spatial design and color in interior environments by examining how different types of spaces and color schemes influence human emotions, behavior, comfort, productivity, and well-being, while comparing Indian and international perspectives to understand their combined role in creating effective and user-centered interior spaces.

6. Methodology

This study follows a qualitative review-based research method, which means it is based on understanding and analyzing already available studies instead of collecting new data through surveys or experiments.

6.1. Research Type

The research is descriptive and analytical in nature. *Descriptive* because it explains the ideas given by different researchers *Analytical* because it compares and connects those ideas to understand the relationship between space, color, culture, and human emotions

6.2. Data Source

The study uses secondary data, which has been collected from: Books related to interior design and environmental psychology, Research papers and journal articles Published works of selected Indian and international authors.

6.3. Selection of Literature

The authors and research studies included in this review were selected based on their direct relevance to the core themes of space, color, and human behavior in interior design. To

ensure a balanced and comprehensive understanding, the study incorporates both Indian and international researchers, allowing comparison between cultural perspectives and global design theories. The selected literature covers diverse but interconnected areas, including cultural and emotional relationships with space

7. Results and Discussion

The findings of this study show that both space and color have a strong impact on human emotions, behavior, and comfort. Spaces that are open, well-organized, and properly planned help people feel relaxed and comfortable. On the other hand, crowded or poorly arranged spaces can create stress, confusion, and discomfort. Elements like natural light, ventilation, and furniture placement also play an important role in improving the quality of a space. For example, homes with open layouts and good lighting are generally perceived as more positive and welcoming. Color is another important factor that directly affects mood and mental state. Soft and cool colors such as blue and green are found to create a calming and peaceful environment, while bright and warm colors like red and orange increase energy and activity. However, excessive use of strong colors may lead to irritation or visual stress. Neutral colors such as white and grey help in creating balance and simplicity in a space. The study also shows that color selection should be based on the function of the space. For example, bedrooms should have calming colors, while living areas can have more vibrant tones.

The combined effect of space and color is more powerful than using them separately. A small room can feel larger and more comfortable when light colors are used, while a large room can feel more cozy with darker shades. Proper space planning along with suitable color combinations creates a balanced and harmonious environment. Cultural factors also influence design choices. Indian interiors often prefer bright and warm colors due to cultural and traditional values, while Western interiors tend to use neutral tones. Overall, the discussion highlights that interior design is not only about appearance but also about how a space makes people feel. A well-designed space supports emotional well-being, improves productivity, and enhances daily living experience.

8. Conclusion

This study concludes that the psychology of space and color is a very important part of interior design. Both elements play a major role in influencing human emotions, behavior, and overall comfort. Proper use of space can improve movement, usability, and interaction, while the right choice of colors can create a positive emotional response. Together, they help in creating spaces that are not only functional but also psychologically supportive. The research also shows that design should not focus only on beauty or decoration. Instead, it should consider the needs, feelings, and cultural background of the users. A well-designed interior can reduce stress, improve mental health, and increase productivity. On the other hand, poor design can lead to discomfort and negative experiences.

In conclusion, interior designers must carefully plan both spatial layout and color schemes to create meaningful environments. Future research can focus more on Indian living conditions, small urban spaces, and practical applications. By understanding the psychological impact of design, better and more human-centered spaces can be created.

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How to Cite This Article

Kunjur A, Nigam S. The psychology of space and color in interior design. *International Journal of Humanities and Sustainable Innovation*. 2026 May–Jun;2(3):19–24.

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