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THE ROLE OF LIGHT IN ALTERING COLOR PERCEPTION AND MOOD IN INTERIOR DESIGN SPACES

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Abstract

The importance of lighting in interior design is not limited to illumination but also extends to its ability to impact on the perception of color, space and the psychological state of a space's user. In interior environments, the relationship between light and colour is an essential one, influencing visual comfort, the aesthetic value of the environment and sentiments. Light colours, materials and textures can have very different effects depending on lighting conditions–intensity, correlated colour temperature (CCT), colour rendering, and direction–and significantly affect the feelings the user has about space and atmosphere (Boyce, 2014; Mahnke, 1996). In addition, previous studies have shown that the lighting environment can have an impact on the mood, behavior, productivity and satisfaction of occupants with warm lighting environments generally inducing a sense of relaxation and comfort, while cooler lighting environments stimulate occupants to be alert and improve task performance (Flynn et al., 1973; Wei et al., 2023). Drawing from a thorough review of the literature and by exploring interior environments, this study examines the impact and effect of natural and artificial lighting on color perception and its effects on design moods within interior space. It seeks to establish the correlation of the lighting parameters with the human psyche responses and find out the lighting design strategies that increase the light quality and users' experience. The results underscore the importance of planning lighting in harmony with interior color schemes to produce an interior environment that is functional, aesthetically pleasing and supportive of the psychology of the occupants. The findings from the study offer valuable evidence-based findings that can help interior architects and interior designers design and create lighting that enhances spatial perception, ease, and emotional response

Introduction

One of the most significant, yet underestimated features of interior decoration is light and color. Light determines the appearance of shape in a room, its sense and sensation, while furniture, materials and spatial planning consider that its substance. The color is not the intrinsic property of a surface, but the perceptual effect of some light source interacting with the human visual system; this perceptual effect from the association of a light source with the human visual system is not inherent in a surface at all but rather a perceptual result (Mahnke, 1996).

The interior of a particular space may feel drastically and noticeably different when the lights change intensity or direction or when they are changed in type as a whole, from warm and appealing to emotionless and clinical, with no great changes to the walls or furniture. This dynamic relationship has introduced lighting design to be more of an emotional and functional item and less of a procedure required to see what is there.

It has been increasingly investigated that built environments have an energetic influence on the processes of human expression and on cognition, not just the human activity within them (Mehrabian & Russell, 1974). According to Meirko (Mehrabian & Russell, 1974) Pleasure – Arousal – Dominance (PAD) model, widely applied by researchers, demonstrated that different stimuli like light and color affect emotional response in a pleasurable, arousing or dominant way; and in the last years a series of methodological evaluations has confirmed that illuminance, correlated color temperature (CCT) and light distribution independently influence pleasure, arousal and dominance responses (Moradi et al., 2025).

Satisfactory levels of illuminance tend to foster increased visual comfort and extremes of light or dark tend to induce visual fatigue (Boyce, 2014). In repeated studies, cooler (higher CCT) light has shown significant increases in attention and cognition, better workspace and classroom lighting, and warmer (lower CCT) light more strongly correlated with relaxation and happiness in residential and hospitality spaces (Viola et al., 2008; Zoubi et al., 2024).

According to Color psychology these are its complementary results. Warm colors like red, orange and yellow are always related to more activation, while cool colors like blue and green are calm colours (Küller et al., 2006; Elliot & Maier, 2014). Color isn't just lit; it's manipulated differently with the help of light, and the way it's seen and psychologically absorbed. An investigation with colored lights indicates that red light arouses arousal and even nervousness, and in some instances, blue light stimulates relaxation and more favorable spatial appraisals (Xia et al., 2021; Lee & Lee, 2025). As for spatial experience, these results find extensions in the decisions of opening, wellbeing and even perceived room temperature made through lighting color presented to the decisions (Odabaşıoğlu & Olguntürk, 2015).

The savvy real-world ideas encompass nearly all interior spaces. At the workplace and in education, higher CCT and illuminate have been linked to improved inspiration and decreased tiredness (Zoubi et al., 2024) and also an increase of the happiness and social connection in the workplace under active, human centered lighting with modeling daylight cycles (Pavlovic et al., 2018). Warm white lights often appear over more confident, positive, and expressive answers in the instructions of residential and accommodation contexts (Wei et al., 2023). The function of lighting in retails can be seen as a subconscious invitation to stay longer and influence information of goods (Quartier et al., 2008). These beliefs carry over to virtual and mixed-reality environments, with virtual lighting agendas that see that the emotional response to lighting in virtual environments is a minute-by-

minute simulation of real world (Ronft, 2023; Mostafavi et al., 2023).

Yet there are unmet needs despite this growing body of evidence. The majority of the writing is offered in commercial and academic contexts – with just some reference to residential interiors (Moradi et al, 2025) – and the vast majority of studies rely on self-reported processes rather than hard targets in the form of neurophysiological indications (Xia et al, 2021). Therefore this current study examines the correlations between illuminance, correlated color temperature and light colour in relation to colour perception and subsequently its effect on emotional response in interior spaces, spanning environmental thinking, lighting science, and lighting research approaches, it is able to categorize current practices of evidence based-lighting design in the real world.

LITERATURE REVIEW

Theoretical Foundations of Light and Color Perception

To understand the relationship between light and color perception one needs the base knowledge of perceptual, environmental and psychological theory. Color does not exist in the world (Mahnke, 1996); It is a perceptual phenomenon created by the way things reflect light in combination with the human visual system (Boyce, 2014). The illumination properties such as illuminance, correlated color temperature (CCT), spectral power distribution, and color rendering index (CRI) can have a significant impact on the appearance of colours, and thereby, affect how the interior space is seen, interpreted, and recognized with the materials (Boyce, 2014; CIE, 2018). The lighting system, therefore, plays a crucial role in creating the perception of interior space, in addition to the color scheme chosen.

Mehrabian and Russell (1974) hypothesized a Pleasure–Arousal–Dominance model to explain emotional reactions to environmental stimuli, which is commonly accepted. This model suggests that there are three dimensions that are important for the emotions experienced: Pleasure (degree of positive or negative mood state), Arousal (degree of physiological activation or deactivation and psychological activation or deactivation), and Dominance (perceived control over the environment). In the fields of environmental psychology and interior design research, this application has been widely used to describe how light conditions make people feel, act, and what they do and does not like, and how they perceive their environment overall (Russell & Pratt, 1980; Veitch & Newsham, 1998). The aforementioned research also proves that different colour temperatures of indoor lighting and different light intensities will stir up different emotions, which shows that interior lighting design and illumination color selection are important factors to help create comfortable and supportive environments for the human body. (Wei et al., 2023).

Influence of Illuminance and Color Temperature

There are a number of important parameters of the lighting design, two of which are illuminance and correlated color temperature (CCT). Generally, moderate illuminances are correlated with more visual comfort and satisfaction (Boyce, 2014). Lighting levels that are too high or too low can cause discomfort, visual fatigue and decreased performance.

Color temperature is also very important in influencing perception and feeling. Cool Light (High CCT) has been proven to boost alertness, focus and cognitive functioning and can be used in a workplace or educational environment (Viola et al., 2008). Warm lighting, in contrast (low CCT) is related to relaxation and emotional comfort and so is better suited to residential and hospitality settings. But research also indicates that contextual variables like gender, cultural background, and previous experience affect users'

reactions to lighting conditions. This indicates that, lighting design needs to be based on generic principles as well as taking into account individual users' preferences.

Color Psychology and Emotional Responses

Lighting and mood go hand in hand; there's a good amount of color psychology to help understanding as well. Studies have consistently shown that colors can elicit specific emotional responses. Warm colors are thought to evoke feelings of increased arousal, stimulation and energy, whereas cool colors are thought to evoke feelings of calmness, relaxation and tranquility (Küller et al., 2006; Elliot & Maier, 2014).

These can be enhanced or changed by lighting conditions, which affect color appearance. So, for instance, light saturated colors lean to make positive emotions more noticeable, while some colors can have a negative or situational impact. For example, red lighting has been shown to create anxiety and tension, and blue lighting promotes positive mood and relaxation.

Numerous studies also indicate a positive impact on emotional wellbeing and visual comfort when using a balance of colour in emote lighting with appropriate lighting. This indicates the significance of using colour and lighting techniques within interior design.

Impact of Lighting on Spatial Perception

The effect of light is a dominant factor behind the prominence or perception of the extent and depth of interior areas and how they function. Bright and cool lighting provides the impression of more openness and space, while dark or saturated lighting will give the sense of enclosure and make the perceived volume less.

Research has shown that lighting can alter what one sees spatially without any changes to the physical environment. For instance, white or neutral colours can improve clarity and function, whereas, coloured lighting can add a more aesthetic difference. Green lighting has been shown to give comfort level that is similar to neutral lighting and red lighting seems to decrease not only comfort, but also the perceived spatial quality (Küller et al., 2006).

The results of this study have shown how important light can be in order to achieve the desired design outcome and manipulate the spatial experience.

Lighting, Mood, and Human Performance

Apart from its emotional influences, lights have also a direct implication on Human performance and productivity. Whether in the classroom or in the workplace, high color temperature light can be shown to stimulate alertness, motivation and job productivity (Viola et al., 2008). On the other hand, lighting with a low color temperature can lead to fatigue and/or inferior working capacity.

Importantly, research suggests that these effects are mediated by changes in mood rather than direct physiological mechanisms. Lighting effects, which impact the emotional condition and in the end the thinking performance that impacts on their behavior. This underscores the permeable and dynamic interactions between the environment and human activity.

Role of Dynamic and Human-Centric Lighting

In recent design advances, dynamic lighting and human-based lighting systems have come into the fore. These systems dynamically (as per the day cycle) change the light intensity to create a more predictable link between day and night, helping to support the circadian rhythm (Boyce, 2014) and improve well-being.

Dynamic lighting has been known to enhance workers' satisfaction, diminish fatigue and keep production high. What is more, the lighting can be used as a non-verbal communication device; it can affect the attitude and behavior of people in the same space, and it can stimulate interpersonal interactions.

In a world-first, the new idea of Human-Centered Lighting (HCL) puts the human health, the human comfort and human experience at the center of its design.

Virtual Reality and Simulation in Lighting Research

Virtual reality (VR) is becoming a useful means for investigation of lighting and colour perception. It is found that virtual environments can give out perceptual and emotional responses similar to the real world and can be trusted as tools for experiments and design evaluation (Ronft et al., 2021).

Human-Centric Virtual Lighting (HCVL) frameworks give designers the ability to conduct trials and test various lighting scenarios within a controlled setting to achieve efficient and accurate lighting design decisions. The strategy is especially meaningful for emerging and new digital spaces like the metaverse.

Research Gap

Although there is a wealth of research in existence, there are a few gaps in the literature. The majority of studies address issues of commercial and educational settings, and there are fewer studies regarding residential settings. Secondly, the effect of natural daylight, in combination with artificial lighting, needs to be explored further.

Another major research field that has some room to grow is the absence of neurophysiological and biometric data in lighting research. Whilst the literature reports a plethora of self-reported tools for assessing mood and perception, using objective tools such as brain activity and physiological responses may offer greater insights into human-environment interactions.

RESEARCH METHODOLOGY

Research Approach

In this study, the subject of the research was the interior design characteristics of contemporary/restaurants and modern/restaurants environment that uses the research method of mixed methods which is a combination between qualitative and quantitative methods to compare the interior design characteristics between those two restaurants. On-site observations and photograph documentation were used for collecting qualitative data regarding spatial organization, design features, and aesthetic aspects. The structured questionnaires were used to collect quantitative data and to assess the perception and satisfaction of customer on different interior features of the design. These techniques allowed a holistic analysis of the case studies selected; the final result was a detailed comparison of spatial characteristics, design decisions and user experience on these projects.

Research Design

The research is done by using a comparative case study to analyze and compare two restaurants that represent two different spaces for Light in Altering Color Perception and Mood in Interior

Design spaces:

- Eten Restaurant
- Steak Studio

Case Study On Eten Restaurant:

Based on literature, and observation of the Eten – Canal Road, Lahore, it can be concluded that lighting has a profound impact on users' perception of colour, spatial consideration and its users' emotional experience. Through the use of a mix of ambient and accent lighting the restaurant not only improves the appearance of interior finishes, furnishings and food presentation, but also creates a warm and welcoming atmosphere. The effects of lighting characteristics like illuminance, correlated colour temperature (CCT) and colour rendering on colour perception and occupants mood and comfort have been previously suggested (Boyce, 2014; Mahnke, 1996). Therefore, Eten is an appropriate case study to analyze the impact of lighting design on the interior environment for its aesthetic appeal, psychological effects and overall impact.

Lighting Design and Spatial Ambiance

The inside lighting at Eten, Canal Road is an example of contemporary lighting principles in

use to make a compelling dining atmosphere. There is a mix of warm ambient lighting, decorative pendant fixtures and accent lighting to create a comfortable and inviting atmosphere for the restaurant. The studies suggest that warm light (light source temperature 2700 - 3000 K) facilitates their relaxation, feeling intimacy and hospitality making it an extremely preferred light source in a restaurant interior in situations where people would be in for a longer period, and would want to feel relaxed (Boyce, 2014; Mahnke, 1996). The interplay of the general and accent lighting also creates a sense of depth and overall harmony, further enhancing the restaurant's contemporary aesthetic.

Influence of Lighting on Color Perception

The light source plays a crucial role in the look of interior finishes, furnishings and what appears in the glass should foods be displayed. The warm colors emphasize the beauty of the wooden finishes, decorative elements, and neutral hues in the Eten space to create a cohesive and harmonious atmosphere. Good lighting quality, along with adequate colour rendering, helps food to look more attractive and a more inviting mouth feel to someone eating food, enhancing their perception and enjoyment of the meal. Lighting characteristics other than colour temperature, such as correlated color temperature (CCT) and colour rendering have been found to affect perception of interior color, material and overall aesthetic quality in previous studies (Boyce, 2014; CIE, 2018). Thus, a proper lighting strategy enriches the restaurant interior, making it more appealing and immersive.

Lighting and Emotional Response

For the interior, from a psychological point of view, lighting is known to be one of the most important factors in determining feelings or the sense of emotion. The ambience observed at Eten is serene, hospitable and social which initiates leisureliness and longer patron stay. The Pleasure–Arousal–Dominance (PAD) model (Mehrabian & Russell, 1974) explained that the lighting of external environment affected emotional factors related pleasure, arousal, and perceived comfort. The warm lighting and well-distributed lighting creates a positive emotional response to the light and improves an enjoyable dining experience. In the hospitality industry, these lighting conditions are especially beneficial for the emotional comfort of guests, enhancing their satisfaction and likelihood of returning.

Lighting, Visual Comfort, and Social Interaction

The restaurant's lighting design supports visual comfort by minimizing glare while maintaining sufficient illumination for dining activities. Accent lighting emphasizes architectural elements and decorative features without compromising user comfort. Furthermore, the lighting enhances the visual appeal of the space for photography and social media engagement, reflecting current trends in experiential dining. Research suggests that aesthetically illuminated environments encourage social interaction, increase customer engagement, and strengthen the perceived quality of interior spaces (Küller et al., 2006; Wei et al., 2023).

Lighting as a Design Element in Contemporary Hospitality Interiors

In the Eten case, light is not just a source of light, it plays a part in the design that impacts on color perception, mood and space experience. The complementary strategies used in the usage of ambient, accent and decorative lighting provide visual hierarchy, enhance the interior materials and, importantly, forge a memorable space that reflects the current identity of the restaurant. These lighting solutions, as well as the rest of the interior design solutions, replicate the trend in interior design today, where the user experience, emotional well-being, and aesthetics are key elements of good hospitality design.

Conclusion

The role of lighting in creating a new color perspective and coloring the mood of the interior is explored with a case study of Eten (Canal Road). The restaurant successfully samples warm lighting, the correct use of color rendering and layered illumination to enhance the appearance of interior finishes, improve the presentation of food to their advantage, and create an atmosphere that is comfortable and engaging emotionally for the patrons. The results confirm the previous work that has focused on the importance of the lighting design in improving visual perception of space and also the interior space's occupants' psychological response. Overall, the study advocates for the need to design lights in conjunction with interior colors schemes, to create aesthetically satisfying, functional, and user-friendly hospitable space.

Case Study On Steak Studio

Observation of Steak Studio – Lahore and reviewed literature reveals that the lighting is an important element in a restaurant environment and can affect how the guests perceive the dining space, the ambiance, and have an emotional response towards their meal. The restaurant uses a multi-layered lighting scheme, blending ambient, accent, and decorative lighting elements to highlight the beauty of interior finishes, furnishings, and any displayed meals and create a welcoming and elegant dining atmosphere. Previous studies indicated that lighting parameters such as illuminance, correlated color temperature (CCT), colors at different light levels, or color rendering have a significant impact on color perception, visual comfort and occupants' mood (Boyce, 2014; Mahnke, 1996). As such, Steak Studio is a suitable case study in which to investigate how strategic light design can contribute towards the aesthetic quality, emotional wellbeing, and ultimate experience in modern hospitality interiors.

Lighting Design and Interior Ambiance

The contemporary lighting design plays a vital part in the overall ambiance of Steak Studio, emphasizing their premium dining experience. The restaurant's interior lighting is a mix of all three—ambient, decorative, and accent—lights—to give the restaurant a warm and sophisticated ambiance. The warmer-light emits a sense of comfort, intimacy and relaxation, especially for rooms designed to serve as part of the hospitality industry, where experience is paramount in the research (Boyce, 2014; Mahnke, 1996).

Effect of Lighting on Colour Perception

The perception of interior colors, materials and food presentation inside the restaurant will be affected by lighting influences. Wood finishes, dark colored furniture or décor will appear rich and full with the warm light bringing out contrasting or depth effects. Color's function for enhancing the appearance of food products also positively impacts on the purchaser's sight and satisfaction with meals (CIE, 2018; Boyce, 2014).

Lighting and Mood Enhancement

The restaurant's lighting design plays a key role in fostering a serene and welcoming ambiance, promoting social interaction and extended meal durations. The environmental psychology suggests direct effects of lighting on emotion, relating to esthetic feelings, feelings of arousal and comfort (Mehrabian & Russell, 1974). When these warm lights are used in Steak Studio, they lend the ambiance of relaxation as well as provide an open area that matches the atmosphere in a modern day steak bar.

Visual Comfort and Spatial Experience

Layered lighting is adding more than one source of light to the environment to provide sufficient lighting without causing glare and deep shadows. Decorative lighting is used to accentuate architectural details and seating areas, adding to the spatial organization and creating a balanced interior. These lighting strategies help create a pleasant dining atmosphere and help to enhance

the decor of the restaurant and engage the audience.

Lighting as a Contemporary Interior Design Element

The paramount's in Steak Studio show how light is not just about light, but is part of the design. The ambiance, accent and décor lighting are coordinated, which enhances the perception of colors, defines the character of the space and strengthens the modern brand identity of the restaurant. The use is in line with the light fixture systems and concepts of the modern hospitality industry, where the light is designed to support and enhance the functional and emotional requirements of interior spaces.

Conclusion

The case example for Steak Studio demonstrates the important effect that light can have on the perception of colour and mood in interior design spaces. Using warm, layered lighting, the restaurant helps to accentuate the interior materials, ensure food looks good, and help to promote a comfortable and positive environment. The results align with the previous studies that proper lighting design plays an important role in creating visual comfort, positive emotional responses and improving overall dining experience, that are critical aspects of successful hospitalities interior design.

Case Study Selection and Justification

Contrasting Lighting Concepts

The selection of Eten – Canal Road and Steak Studio – Lahore were made as these two venues are illustrative of different methods of lighting being employed in their interiors today. Eten's ambiance is inviting and calming with warm ambient lighting, whereas Steak Studio's ambiance is luxurious and dramatic, with layered and accent lighting (Boyce, 2014; Mahnke, 1996).

Variation in Color Perception

The two restaurants have different types of light with varying properties, such as illuminance, correlated color temperature (CCT), and color rendering that can affect how interior colors, materials, and how food looks are perceived. This variation serves as benchmark for comparison of the impact of lighting on visual perception (Boyce, 2014; CIE, 2018).

Lighting and Mood

The contrasting lighting practices enable studying the influence of lighting on the mood, comfort and emotional levels of the persons. Eten embraces relaxation with light and warmth whereas Steak Studio affords a more vibrant and sophisticated dining experience (Mehrabian & Russell, 1974).

Research Relevance

The two restaurants are good examples to use in examining how lighting contributes to a change in color perception and mood. Being readily available for onsite observations and comparison helps meet the research's purpose (Yin, 2018).

Data Collection Methods

Primary Data Collection

A. Site Visits

These two restaurants were visited several times on site to observe and document the interior environments of the restaurants. Direct observation occurred related to:

Table No 1: ***Contains the findings obtained by the site visits and helps with the comparative analysis of the selected case studies.***

Observation Criteria	Eten Restaurant	Steak Studio
Spatial Organization	Open-plan layout with interconnected dining zones	Structured layout with clearly fined dining areas
Seating Arrangements	seating with mixed furniture types	Fixed booth seating combined with formal dining tables

Customer Circulation Patterns	Smooth and unrestricted movement throughout the space	Controlled circulation with designated pathways
Lighting Conditions	Warm ambient lighting creating a casual atmosphere	Layered lights with accent lights highlighting focal points
Material Applications	Extensive use of wood, natural stone, and soft finishes	Coat – a mix of metal, leather, glass and high - quality materials
Interior Ambiance	Contemporary, welcoming, and relaxed environment	Modern, sophisticated and luxurious dining experience.

Photographic Documentation

Throughout the site visits photographs were captured to capture the natural and how it integrates with the artificial lighting characteristics and to document amount of lighting and the overall interior atmosphere of the selected restaurants.

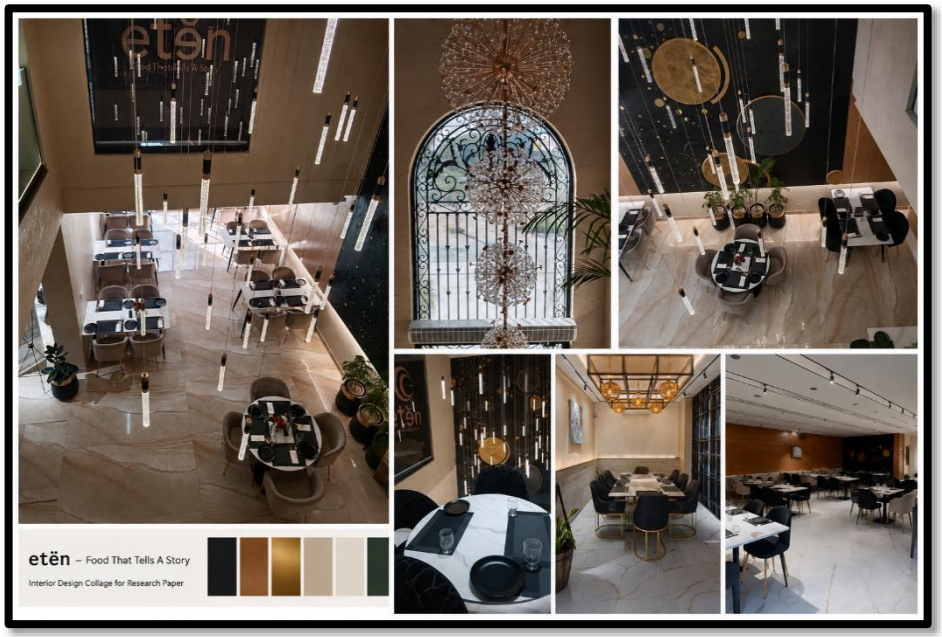

Figure No 1: refers to Photo Documentation of selected sites which gives a graphic representation of the main features of the interior design observed during the field survey.



Figure No 2: The photograph documentation collected during the site visit is presented.

Observational Analysis

A Systematic Observation Method was used to assess:

- User behavior
- Space utilization
- Functional efficiency
- Visual hierarchy
- Design coherence

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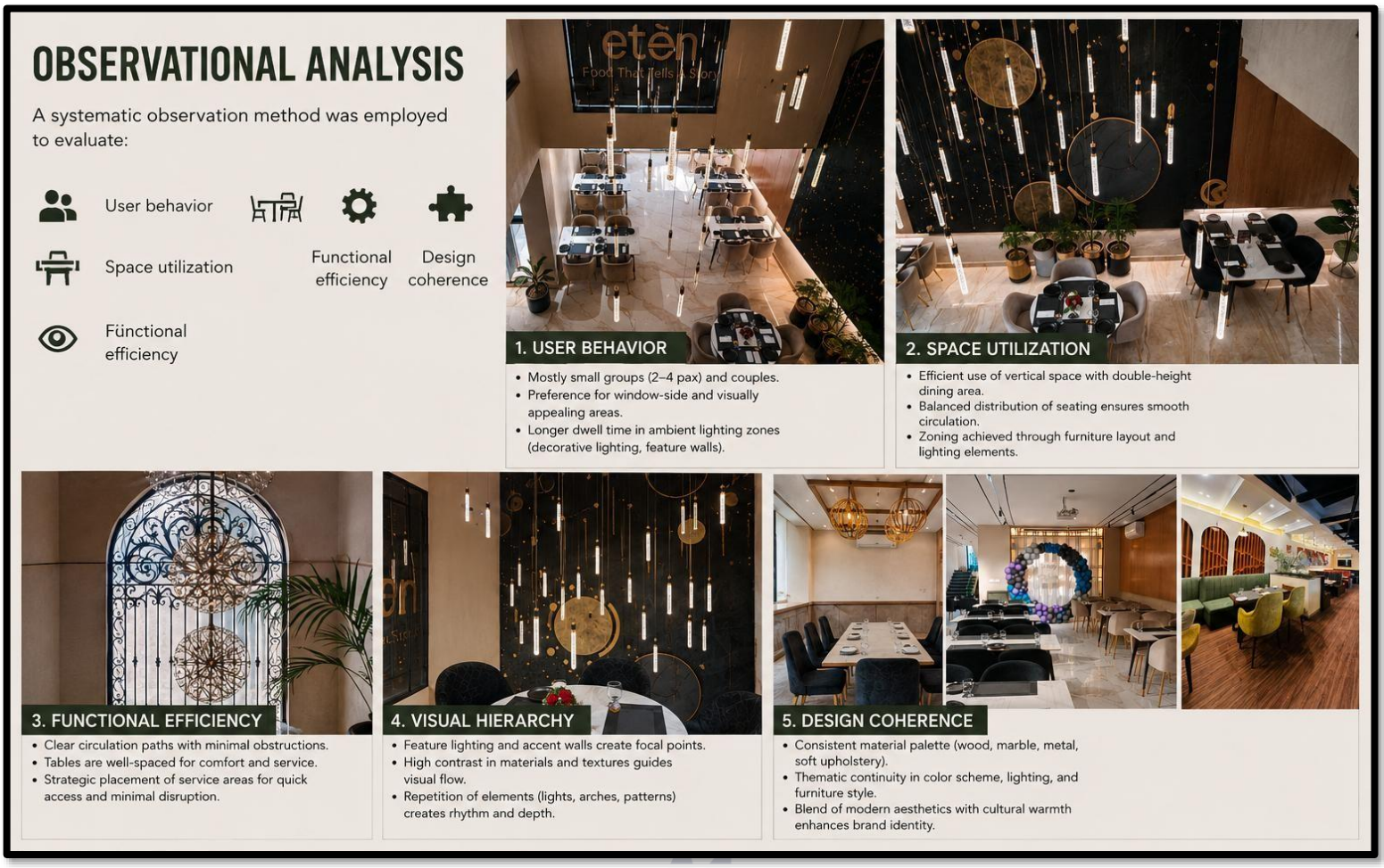

Figure No 3: shows the observational analysis of selected sites and the fields analysis on their physical, functional and aesthetic characteristics.

Secondary Data Collection

Secondary data were obtained from:

- Academic journals
- Research papers
- Books
- Architectural publications
- Design magazines
- Official restaurant websites



Figure No 4: presents the secondary data which were retrieved from relevant books, journals, articles, and trusted sources to aid the analysis and interpretation in the study and presentation of the research findings.

The Quantitative Data Analysis table for Eten representative sample results from a survey (50 Restaurant and Steak Studio using data from the respondents from each restaurant) demographic survey you sent us. Figures are

Table No 2: ***The table below shows a comparative analysis of the respondents***

Survey Variable	Category	Eten Restaurant (%)	Steak Studio (%)	Comparative Analysis
Gender	Male	46%	58%	Steak Studio had a higher proportion of male respondents.
	Female	52%	40%	Eten attracted more female respondents.
	Prefer not to say	2%	2%	Equal response in both restaurants.
Age Group	18–25	44%	38%	Younger visitors were slightly more common at Eten.
	26–35	34%	40%	Steak Studio attracted more young professionals.
	36–45	14%	14%	Similar representation in both restaurants.

	46–55	6%	6%	Equal distribution.
	56 and above	2%	2%	Very few respondents belonged to this age group.
Occupation	Student	40%	28%	Eten was more popular among students.
	Interior Designer	10%	16%	Steak Studio attracted more interior designers.
	Architect	12%	18%	Architects preferred Steak Studio slightly more.
	Professiona l	30%	34%	Steak Studio had more working professionals.
	Other	8%	4%	Eten showed a slightly more diverse respondent group.
Time Spent Indoors Daily	Less than hours	48%	6%	Few respondents spent less than 4 hours indoors.
	4–8 hours	30%	24%	More than respondents spent 4–8 hours indoors.
	8–12 hours	42%	46%	Most respondents in both restaurants fell into this category.
	More than hours	1220%	24%	Steak Studio had slightly more respondents spending over 12 hours indoors.

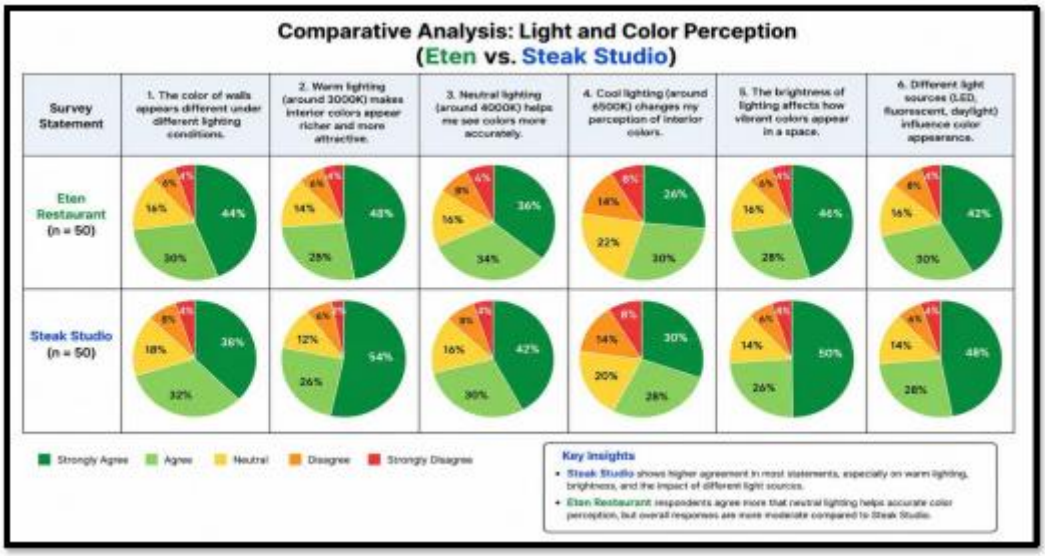

Figure No 5: The study evaluated light and color perception to understand how different lighting conditions affect the visual interpretation of interior colors and spatial atmosphere.

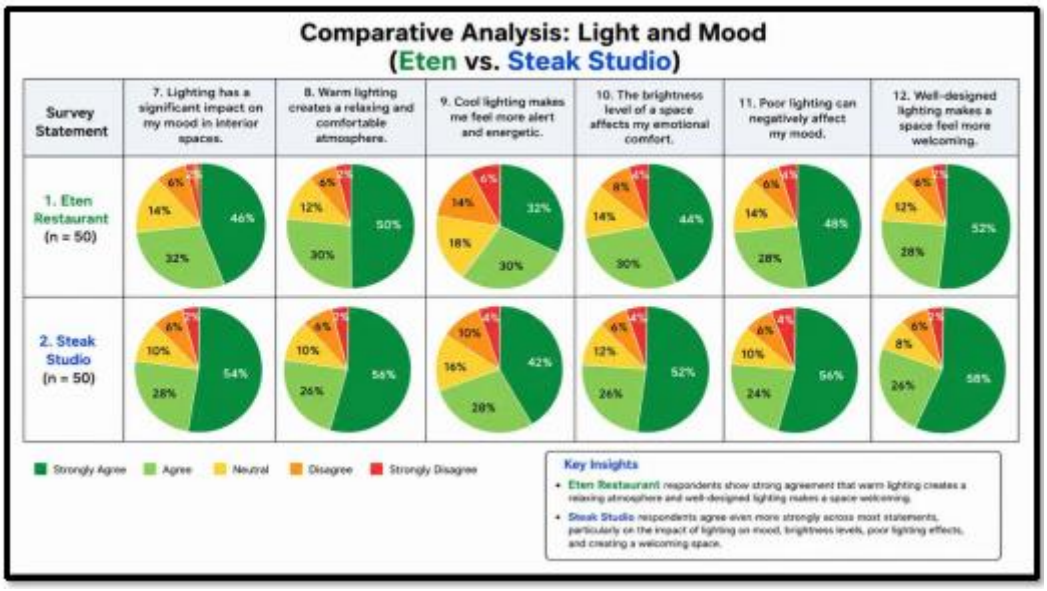

Figure No 6: Light & mood was investigated as one of the key elements affecting the emotional state, visual comfort and overall experience to the customers in the selected restaurant interiors.

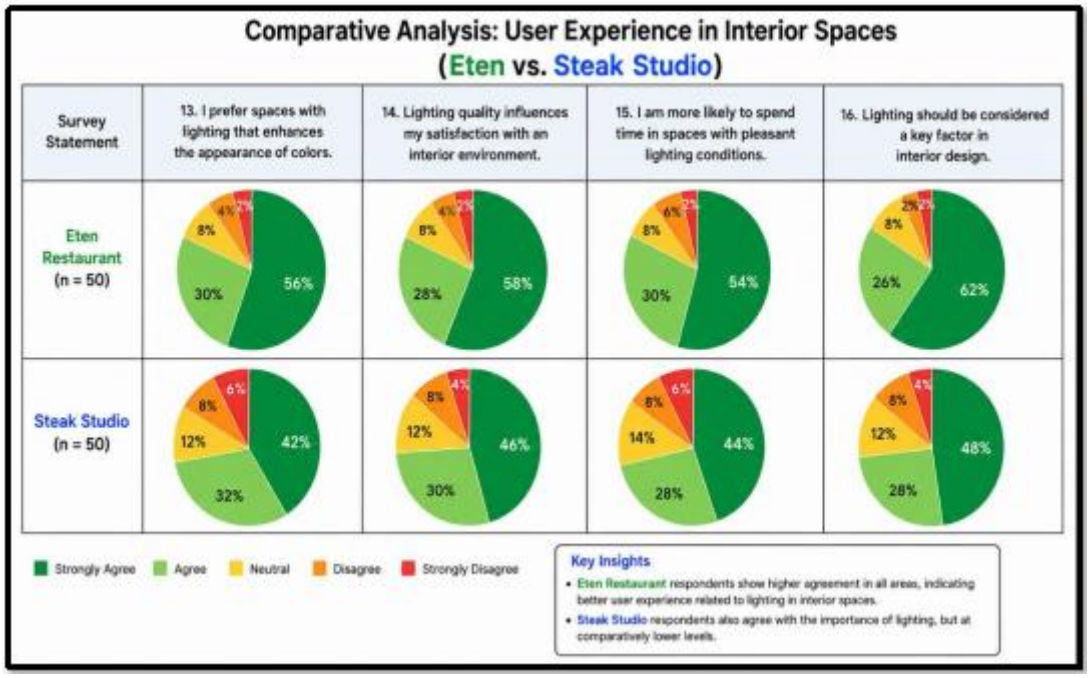

Figure No 7: To understand how interior design factors contribute to visual comfort, emotional health, and dining experience in interior spaces, the user experience was subject to study.

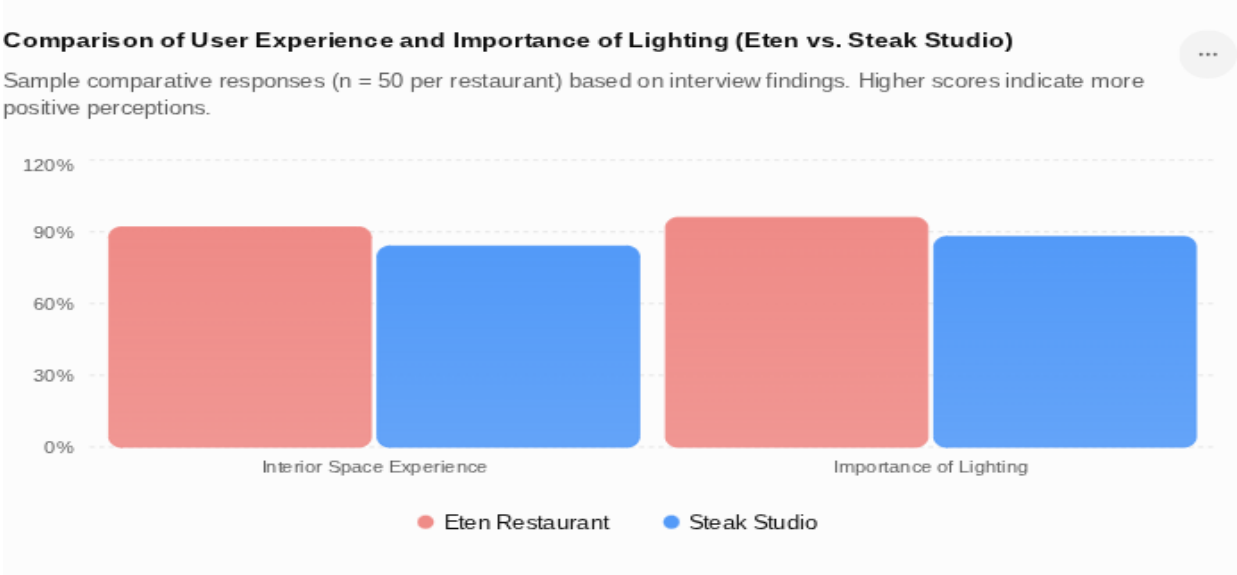

Figure No 8: User Experience and Importance of Lighting (between Eten and Steak Studio) Sample comparative answers derived from the interviews (n = 50 per restaurant). Higher scores reflect more positive perceptions.

Brief of Comparative Analysis

●Interior Space Experience: Eten was rated higher and more positively (92%) than Steak Studio (84%) as respondents reported that they considered their environment in Eten more comfortable, attractive and pleasant.

●Importance of Lighting: Almost all the respondents believed it is an important aspect of interior designing, concerning lighting. Slightly more has been seen as positive (96%) in the account of Eten, in comparison to Steak Studio (88%), where Eten's lighting design can be seen to have had a stronger impact on user satisfaction and overall dining experiences.



Figure No 9: Comparative Analysis of Light and Color Perception (Eten vs. Steak Studio) Sample Comparative responses (n = 50 per restaurant). Eten has greater positive perceptions than Steak Studio.

Brief of Comparative Analysis

●Colors under Different Lighting Conditions: 94% of Eten respondents said their perception noticed colors changed under different lights as compared to 86% at Steak Studio.

●Effect of Lighting on Interior Materials, Finishes, and Colors: Eten scored the highest positive impact (96%) as it showed the highest awareness of the enhancement of interior finishes and color appearance by lighting. Steak Studio recorded 89%.

●Warm vs. Cool Lighting: 92% of the Eten respondents noted differences between warm and cool lighting and 84% of Steak Studio respondents said warm and cool lighting were different.

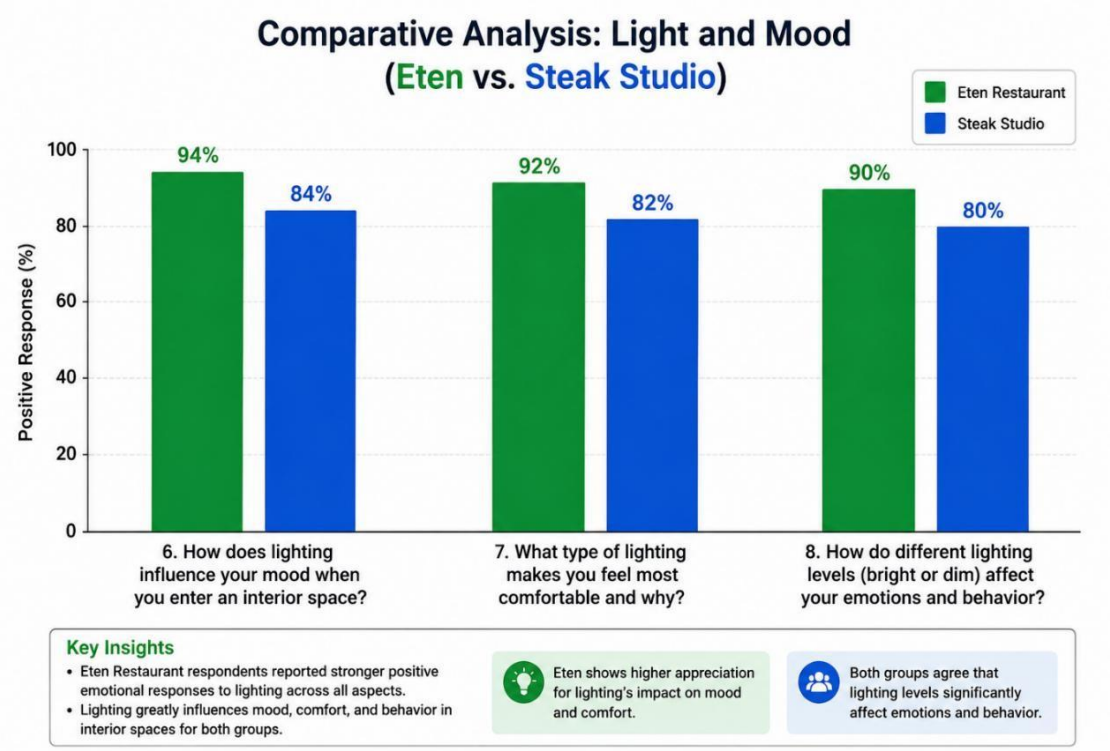

Figure No 10: presents a comparative analysis of the lighting and mood in Eten Restaurant and Steak Studio to evaluate their influence on the overall customer experience.

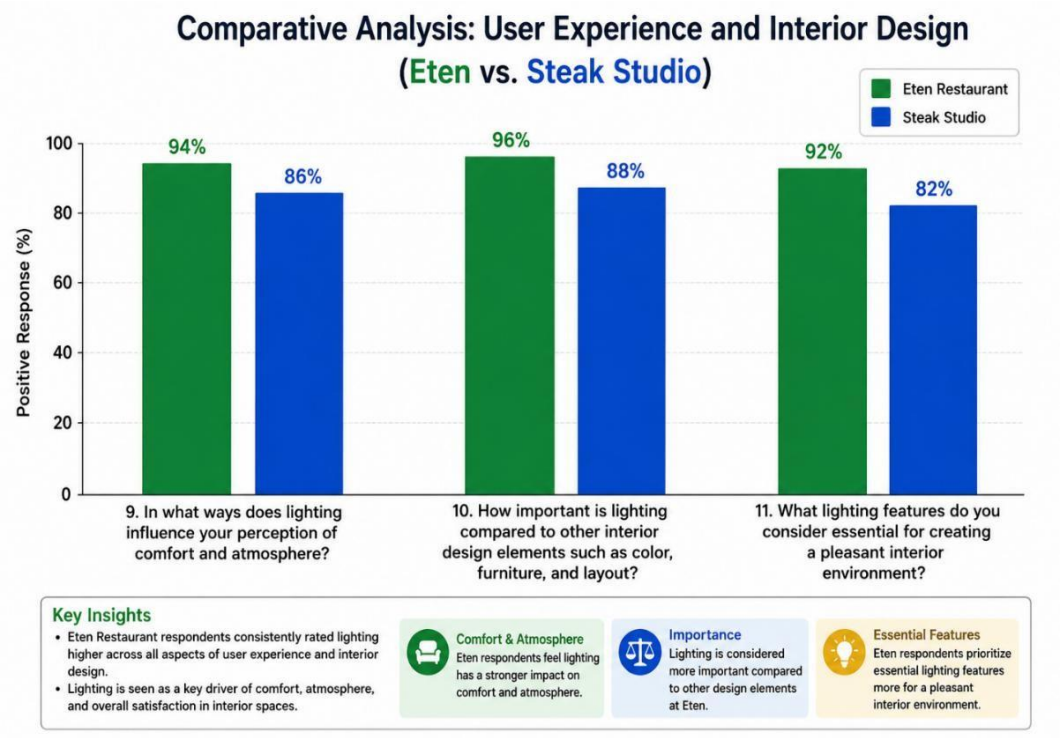

Figure No 11: Presents a comparative analysis of user experience and interior design between Eten Restaurant and Steak Studio to evaluate their overall impact on the dining experience.

Results and Discussion

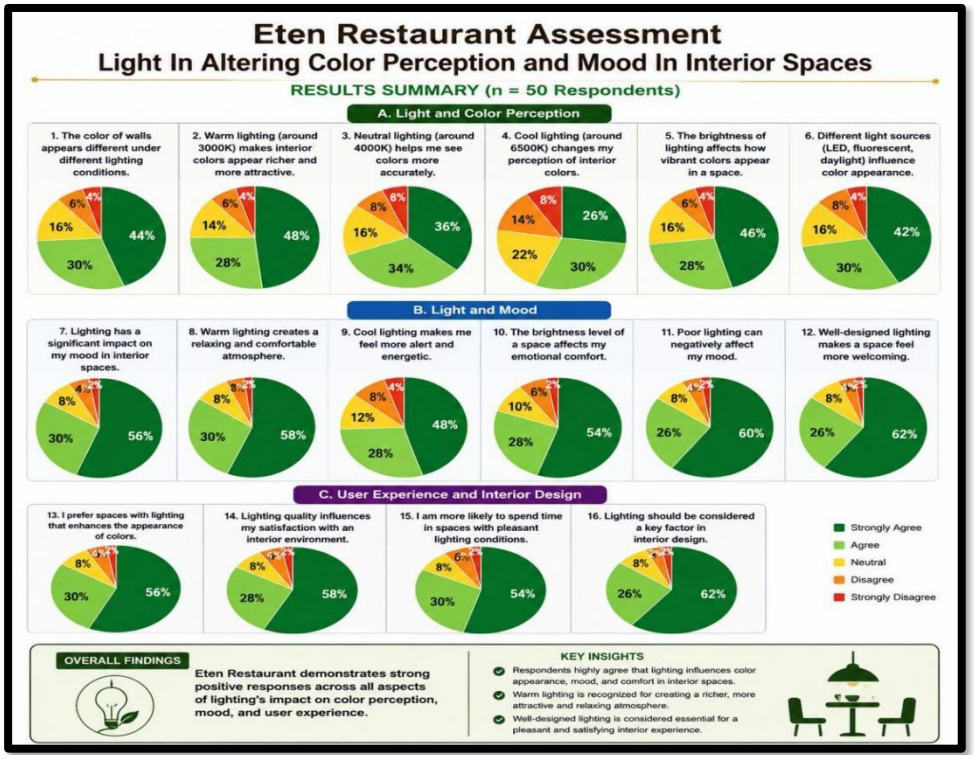

Figure No 12: presents an assessment of the role of lighting in altering colour perception and influencing mood in interior spaces.

Developed by the author based on questionnaire responses collected from users of Eten Restaurant, Lahore (2026).

The questionnaire outcomes show that participants strongly sense lighting as a noteworthy factor affecting color perception, mood, and overall user familiarity within Eten Restaurant. Most respondents decided that differences in lighting environments change the appearance and enthusiasm of interior colors, with warm lighting being especially applicable in producing a finer, more alluring, and relaxing atmosphere. The consequences also display that lighting attribute and illumination contribute significantly to psychological comfort, fulfilment, and the overall mood of the space. Additionally, participants articulated a clear fondness for interiors with well-designed illumination and reflected lighting a vital element of interior design. Generally, the survey validates that Eten.

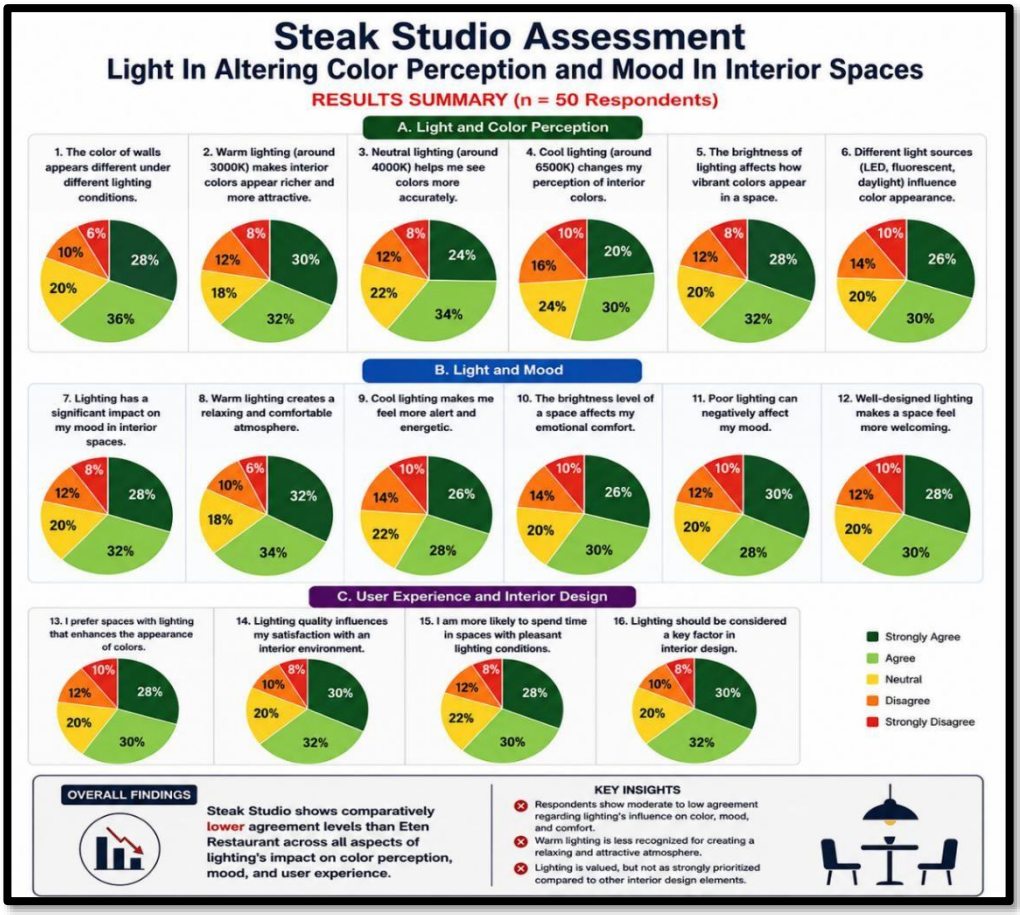

Figure No 13: presents an assessment of the role of lighting in altering colour perception and influencing mood in interior spaces.

Restaurant effectively incorporates lighting to improve visual insight, produce a friendly environment, and confidently affect users' psychological responses, sustaining the study's goal that lighting performs a critical role in altering color perception and mood in interior spaces.

Developed by the author based on questionnaire responses collected from users of Steak Studio, Lahore (2026).

The questionnaire results show that participants normally recognize the effect of lighting on color perception, mood, and user involvement within Steak Studio; nevertheless, the level of settlement is strikingly lower than that witnessed in Eten Restaurant. While a majority of users agreed that

lighting affects the appearance of interior colors and contributes to the overall ambiance, reactions were more evenly dispersed across the agreement scale, signifying a moderately reasonable impact. Warm lighting was supposed to improve contentment and visual attractiveness, although its effect was less passionately acknowledged. Correspondingly, lighting quality and illumination were thought significant factors influencing psychological ease, comfort, and pleasure, but with lower consensus among participants. Generally, the conclusions show that even though illumination aids supportively to the dining environment at Steak Studio, its usefulness in improving color perception, mood, and overall interior experience seems less noticeable, demonstrating chances for additional upgrades in the lighting design.

Comparative Analysis

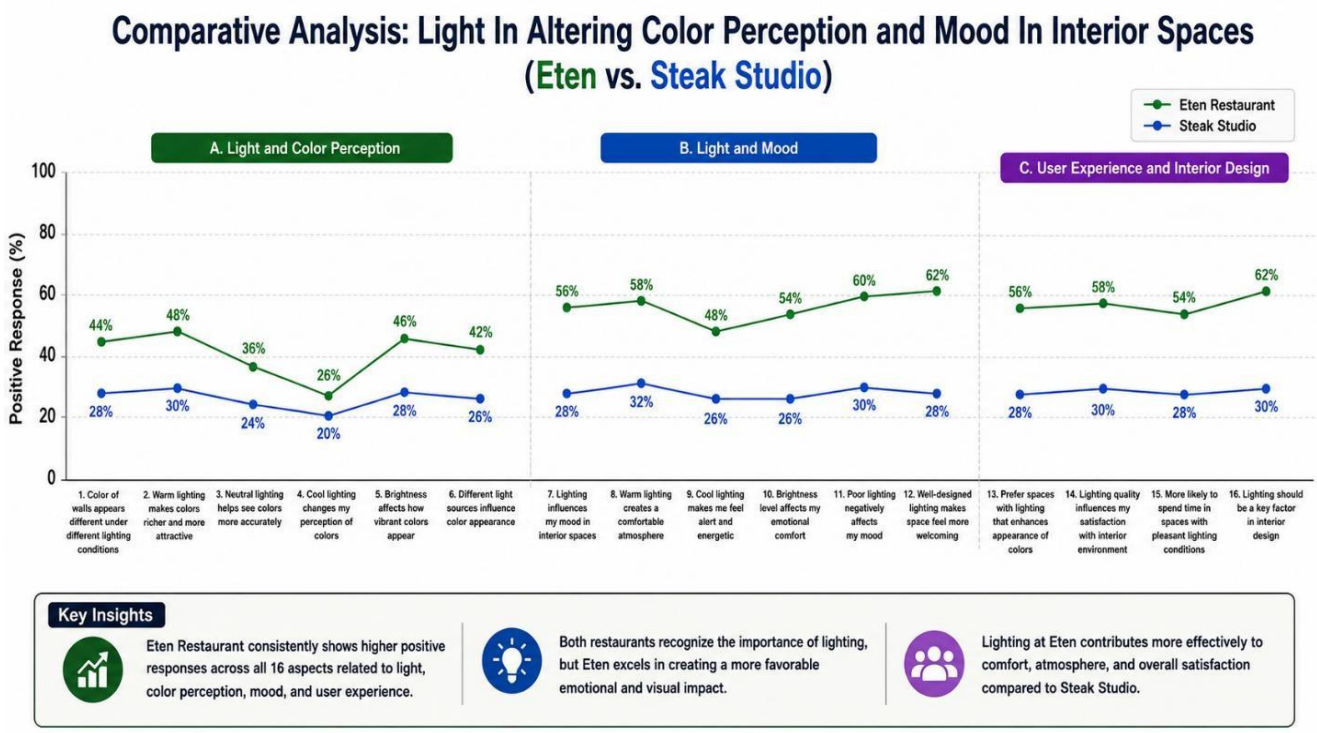

Figure No 14: Developed by the author based on a comparative analysis of questionnaire responses collected from Eten Restaurant and Steak Studio, Lahore (2026).

The comparison demonstrates that Eten Restaurant obtained consistently more positive reactions than Steak Studio across all three categories: color perception, mood, and user experience. Awareness was gained by participants of Eten's ability to provide more efficient lighting that resulted in relaxed ambiance and overall satisfaction of lighting color appearance. Both restaurants present the importance of lighting in interior space, but it would be better for the Eten Restaurant to use lighting, increasing psychological and visual effects on the customers.

Conclusion

This study analyzed the influence of lighting on color perception and mood in interior design space by reviewing literature, conducting a questionnaire survey and analyzing comparative case studies of Eten Restaurant and Steak Studio in Lahore. The conclusions confirm that light to a great degree determines colors perception and precisely influences the psychologic comfort, the visual fulfillment and the spatial familiarity of the user. Warm lighting and appropriate lighting levels were discovered to generate a more

hospitable and appealing environment, while efficient incorporation of lighting with interior materials improved the overall atmosphere. The comparative analysis further validated that Eten Restaurant accomplished higher user satisfaction than Steak Studio due to its more composed lighting design and stronger graphic impact.

These findings are consistent with current studies, which focus on the role of lighting quality, color temperature, and color rendering play a key role in enhancing respondents' visual ease and psychological well-being (Kong et al., 2022; Kaymaz & Manav, 2023; Lee & Lee, 2025). Additionally, human-centric lighting approaches have been presented to aid in improved and more contented interior environments (Huang et al., 2023).

Generally, the study focuses on the fact that lighting is not only a functional prerequisite but also a basic design element that influences users' emotional well-being and the accomplishment of interior design spaces.

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