

Assessment of Lighting in an Institutional Canteen: A Case Study

Hemani Malhotra

Assistant Professor, SVT College of Home Science (Autonomous), SNDT Women's University, Juhu, Mumbai, Maharashtra, India

Abstract

Canteens are an important part of college life, considering they're the only place where one finds most students chatting, relaxing, discussing and conversing. Lighting is an important aspect of interior design as it enhances the aesthetic appeal and creates the mood and ambiance of a space. Lighting fixtures that illuminate a room creates a safe and comfortable environment besides adding style to the interior décor. The existing lighting of the canteen was analyzed because a prominent and visible glare and bluntness was present in the light thrown by the light fixtures. This paper reports the findings of a case study which aimed to see the lighting conditions of an institutional canteen. The illumination levels were inadequate. The study indicated that canteens are established to earn the profits. One must understand before designing the canteen that it is not just eating place but the place to socialize, enjoy and unnerve the patrons. A place can be felt and expressed by its visibility which depends on light. Light is a very essential and crucial element of an environment which needs attention to be designed properly.

KEYWORDS: Light, Institutional Canteen, customer satisfaction

Introduction:

Institutional Canteen is a large spacious area where a variety of refreshments and meals are made available to students and employees. It tends to be the most popular place on campus, not only for physical refreshment but also for student bonding, discussions and even work on assignments and projects. Canteens are an important part of college life, considering they're the only place where one finds most students chatting, relaxing, discussing and conversing. Lighting is an important aspect of interior design as it enhances the aesthetic appeal and creates the mood and ambiance of a space. Lighting fixtures that illuminate a room creates a safe and comfortable environment besides adding style to the interior décor. Light is the main element that gives the room a special look and transforms it into a seamless combination of functionality and style. Besides playing a functional role it creates a visually dynamic space. Lighting can make or break the ambiance of a room. Good lighting assures a warm, inviting and functional atmosphere. Hence selection of proper lighting is the key element in interior design as it enhances everything in a room - from the furniture, flooring, fittings to the finishes and textures. Lighting is one of the most overlooked and yet important elements of good interior design. Ambient light was perceived as important factor for the restaurant atmosphere, confirming the findings that bad lighting in the restaurant can be perceived as negative experience from the customer's perspective (Walter & Edvardsson, 2012).

Atmosphere of the place is created out of customers four senses, visual, tactile, olfactory and aural and it is determined by the color, temperature, scent, music, light etc. (Kotler,

1973). A customer has to get a proper compensation for the price that he is willing to pay for the meal and the best way to provide them, besides food and service, is through restaurant design that will seduce them and want to come back (Sabherwal, 2011).

In today's restaurant market/ canteen management an entrepreneur has to be innovative and stand out from what market has to offer, and to be able to do so have to provide not only good products and service, but also a unique dining environment to contribute to the overall customer satisfaction (Liu & Jang, 2009). Physical environment of the canteen has a great influence on the image of the canteen and can act positively or negatively for the customer perception of the canteen image. Physical surrounding has to be maintained throughout the time and changed or improved according to the customer's wants and the restaurant/ canteen image to keep up with the trends on the current market (Ryu, Lee, & Kim, 2012).

According to study that is done in restaurant industry, important drivers for customer experience are people or employees that interact with customers, core service, more exactly the food that is served to the customer and physical environment of the restaurant (Walter, Edvardsson, & Öström, 2010). The term atmospherics was used to describe the conscious designing of space that will eventually create certain effects in buyers and affect their behavior. Interior design in restaurants should then create unique experience or emotion for the customer and make him want to come back, as for the design in store can be oriented to "enhance the purchase probability".

Research indicates that there is the relationship between lighting level preferences and individuals' emotional responses and approach-avoidance behaviors. Areni and Kim (1994) identified the impact of in-store lighting on various aspects of shopping behavior (e.g., consumer behavior, amount of time spent, and total sales) in a retail store setting. Lighting can be one of the most powerful physical stimuli in restaurants. While bright lighting at fast-food restaurants may symbolize quick service and relatively low prices, subdued and warm lighting may symbolically convey full service and high prices. Ambient elements are intangible background characteristics (e.g., music, scent, temperature) that tend to affect the non-visual senses and may have a subconscious effect on customers.

Purpose of the study:

The restaurants/ canteens are designed for the patrons who give money in return of the services provided by that place such as food, drinks and environment. The environment is a vast field in which light is a very essential element and if it is planned properly it raises the patron turnover rate which ultimately increases in profits. The existing lighting of the canteen was analyzed because a prominent and visible glare and bluntness was present in the light thrown by the light fixtures. Also, there wasn't any special lighting fixture which could enhance the interior or to create an ambience. So an effort was made to study the lighting conditions of an institutional canteen.

Objectives of the study:

The objective of the study was to study the lighting conditions of the institutional canteen and suggest measures.

Research Methodology:

Locale of the study: The research is a Case Study of an Institutional Canteen from Western Urban Suburbs of Mumbai city.

Sampling Method: Convenience Sampling Method was used for the present study. 100 college students who eat in canteen were selected for the study. Anonymity and confidentiality were assured. The respondents were drawn from the age group 17 – 21 years.

Instruments: Observation method was used to find out the existing problems related to lighting conditions in the sitting area. Based on observation a self- administered Questionnaire was used to gather information on physical conditions in sitting area, hand wash area and serving counter. To assess the lighting subjective and objective methods were used. The lighting levels were measured using Extech – EA30 Wide Range Light Meter, USA.

Research Findings and Discussion:

Researchers have stressed the need to develop and plan the environment of retail interiors according to the standards and users’ requirements (Ariffin, 2010). The light is also very much important in the restaurants and it has a vital impact on patrons (Ciani, 2010) to decide to come again, or on their turnover rate and that attitude ultimately increase in profit (Chang, 2011).

Table 1. Frequency of eating in the canteen

Frequency of eating in the canteen	Total (%) (n = 100)
Once in a week	41% (41)
Twice in a week	12% (12)
More than three days	26% (26)
Everyday	21% (21)

While finding out the frequency of students eating in the canteen, it could be seen from table 1 that 41% students ate in the canteen once a week, 26% more than three days, 21% every day and 12% twice a week. In addition to food and service, pleasant physical setting (e.g., innovative interior design and décor, pleasing music, subdued lighting, unique color scheme, ambient odor, spacious layout, appealing table settings, and attractive service staff) should determine to a large extent the degree of overall customer satisfaction and loyalty (Han & Ryu, 2009; Kim & Moon, 2009).

Table 2. Subjective response of lighting in the canteen

Parameter	Yes (%) (n = 100)	No (%) (n = 100)
Subjective response of lighting in the canteen	60% (60)	40% (40)

Table 2 indicates that almost 60% students felt that the existing lighting was sufficient in the canteen which was in contrast with the actual light measurements of the canteen. The reason could be that since the area was familiar to the students they didn't feel that the light was insufficient. They were never exposed to the recommended lighting level in the canteen and hence given a choice after redesigning the subjective response might change.

Table 3. Measurement of light Levels (in Lux)

Areas	Description of the area	Total Average Lighting (Lux)
Area – I (Students Sitting)		
T1	Near the window	2000
T2		2200
T3		2500
Total Illumination Level		2233
T4	Away from the window	385
T5		440
T6		130
T7		100
T8		47
T9		80
T10		50
Total Illumination Level		176
Area-II (Staff Sitting)		
T1	Near the window	158
T2		575
T3		647
Total Illumination Level		460
T4	Away from the window	47
T5		41
T6		80
T7		100
Total Illumination Level		67
Area – III (Counter)		
Main Service Counter		16
Juice Counter		180
Area – IV (Wash-basin)		
Student Wash basin		80
Staff Wash basin		10
Area – V (Drinking Water Area)		
Drinking water area		75

The illumination levels were compared with the standard lighting codes i.e. Illuminating Engineering Society – IES: 200 lux and CIBSE (Chartered Institute of Building Services Engineers): 300 lux. It was found in Table 3 that the lighting level in the students sitting area near the window was 2233 lux which is sufficient but the area away from the

window was 176 lux which was much lower than the recommended level. Similarly, the sitting in the staff area near the window was 460 lux and away from the window was 67 lux which was also lower than the recommended levels. Insufficient lighting in the canteen also led to falls as the lighting level in the canteen was not sufficient to see the wet floor due to spillage, mopping or during monsoons. The range of illumination level at the service counter and juice counter was 16 lux to 180 lux. The dark colour of the service platform also added to the darkness in the area. Lighting at staff washbasin and student wash basin was 10 lux and 80 lux respectively and at the drinking water area was 75 lux which made the entire area dark and unhygienic.

Conclusion:

Canteens are established to earn the profits. One must understand before designing the canteen that it is not just eating place but the place to socialize, enjoy and unnerve the patrons. A place can be felt and expressed by its visibility which depends on light. Light is a very essential and crucial element of an environment which needs attention to be designed properly (Ayaz et al , 2014). The importance of attaining distinctive atmosphere has gained growing attention among hospitality and scholars and managers since it is considered one of key factors in attracting and satisfying customers in the hospitality industry (Han & Ryu, 2009; Jang & Namkung, 2009; Liu & Jang, 2009; Ryu & Jang, 2007). Some of the recommendations to improve the lighting in the canteen are:

1. The interior can be enhanced by the help of good and uniform distribution of general lighting.
2. Careful planning of additional lighting at the seating areas which are not near the window or don't have the light source above the table.
3. Energy efficient lighting like CFL's and LED's should be preferred over medium to high wattage incandescent lamps, because of much higher light output and longer life of the former as compared to the latter.
4. Workplace illuminance will be effectively improved by getting down the mounting height.
5. Service counters should have downlighters or pendant lighting.
6. The lighting plan and the floor plan should be worked on simultaneously by interior designers to match the lighting positions with the furniture placement.
7. The poor maintenance of lamps is one of the major factors responsible for poor levels of lighting in the canteen. So, periodic schedule of cleaning of lamps is essential.
8. Food and service are the most important factors in the restaurant industry, meaning that interior design would not be able to alone sustain customer satisfaction, but it has to provide quality food and service that goes along with it. Interior design is more of a support for the already established food and service quality in the restaurant/ canteen, support that will help to create image and to increase customer satisfaction and make them come back and eventually increase revenue.

References:

1. Ariffin, Bibon, & Abdullah, (2010): "Restaurant's Atmospheric Elements: What the Customer Wants." *Procedia- Social and Behavioral Sciences*, 380- 387.

2. Chang, S., Gong, Y., & Shum, C. (2011): "Promoting innovation in hospitality companies through human resource management practices." *International Journal of Hospitality Management*, 30, 812-818.
3. Ciani, A. E. (2010): "A study of how lighting can affect a guest's dining experience." *Lowa State University, Graduate Thesis and Dissertation. Digital Repository@Lowa State.*
4. Han, H.S., & Ryu, K. (2009). The roles of the physical environment, price erception, and customer satisfaction in determining customer loyalty in the family restaurant industry. *Journal of Hospitality & Tourism Research*, 33(4), 487-510.
5. Kotler, P. (1973) Atmospherics as a marketing tool. *Journal of Retailing*, 49(4), 1973-1974.
6. Liu, Y., & Jang, S. (2009a): "Perception of Chinese restaurants in U.S.: What affects customer satisfaction and behavioral intentions?." *International Journal of Hospitality Management*, 28(3), 338-348.
7. Musinguzi, D. (2010): "The impact of restaurant noise on customers dining experience in Kowloon, Hong Kong." *International Journal of Hospitality & Tourism Systems*. 3(1), 80-85.
8. Ryu, K., Lee, H., & Kim, W.G. (2012): "The influence of the quality of the physical environment, food, and the service on restaurant image, customer value, customer satisfaction, and behavioral intentions". *International Journal of Contemporary Hospitality Management*, 24(2), 200-223.
9. Sabherwal, V. (2011): "Restaurants have become outlets for some of the most creative interiors in the world". *Architecture + Design*. 28(5), 94-100.
10. Schirmbeck, E. (1983): "Restaurants Architecture and Ambience." *Stuttgart: Architectural Book Publishing Company.*
11. Shields, J. (2006): "Effects of atmospherics on revenue generation in small business restaurants." *Journal of Business and Entrepreneurship*, 18(2), 79-87.
12. Singh, S. (2006): "Impact of color on marketing. " *Management decision*. 44(6), 783-789.
13. Walter, U., & Edvardsson, B. (2012): "The physical environment as a driver of customers' service experiences at restaurants". *International Journal of Quality and Service Sciences*, 4(2), 104-119.