

ECONOMICAL LUMINANT ENVIRONMENT IN THE RESTAURANT SETTINGS & ITS IMPACT ON PATRONS' TURNOVER RATE

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ABSTRACT: *Restaurants are established to earn the profits. One must understand before designing the restaurant 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. In the study the researcher tried to develop economical luminant environment in the restaurant settings to see its impact on patron turnover rate (PTOR). Economical in the sense of energy efficient design and control cost design. The two different lighting designs were implemented in two different restaurants, the first restaurant named Lahore View (R1) was designed with rope lights and spot lights, the Jasmine restaurant (R2) was designed with chandeliers and spot lights. Spot lights are used because of the less energy consumption and more effective in the long run than energy savers, the rope lights and chandeliers are used for decorative purpose to make the light interesting for people. The results concluded that the R1 was having more PTOR than R2, the design cost was also less in R1 than R2. That shows it is not compulsory that expensive lighting design raise the PTOR but the design which attracts patrons.*

Key Words: Economical, Environment, Restaurant, Patron, Turnover Rate

INTRODUCTION

The busy lifestyle has created a greater demand for food and drinks that are ready to eat and available in a place to sit and eat such as restaurant. There is a rapid increase in the number of upscale restaurants and have a significant positive impact on restaurant business in Pakistan [1]. As the restaurants are expanding out with an increase in number of patrons, the issue of quality of food and service as well as quality environment has received increasingly more attention. Since the studies on restaurants' environment in Pakistan are neglected thus far, this study aims to develop the economical lighting design which adds in patron turnover rate (PTOR). Upscale restaurants are designed for high level of services but with moderate prices. A restaurant is the revenue rising investment if planned and designed properly [2]. Customers want to feel welcomed, relaxed and comfortable as they spend time and money there [3].

Other than location, menu, prices and staff, the ambience and environment design is also important and need attention in restaurateurs. The environmental impact has long been acknowledged by the landscapers, architects, interior designers, environmental psychologists and also by retailers [4][5].

Lighting as an environmental factor is also crucial to design because proper planned lighting adds to the design and automatically increases business. Light is the only source to provide visual information of any environment [6] and help customers to decide whether to come again or not. It is important to design lighting for both physical and psychological needs of the user [7][8].

The restaurant's illuminating designs need both uniform as well as subjective lighting [7][9]. The combination of functional and subjective lighting systems in the dining halls creates a cohesive, compositional design element [7]. Flynn (1973) also suggested that lighting not only provide necessary levels of illumination for task performance but for

decorative purpose [8] also to raise the number of patrons [10].

Economical lighting design is the fundamental of the comprehensive lighting which has two aspects; one is the energy efficiency design and other cost control design. The first aspect is the avoidance of over illumination to save electrical energy and its charges, the second aspect is to choose the fixtures for lighting which are reasonable, affordable and comes in budget. Lighting fixtures, alone can be used to create the ambience, fluid borders, and privacy [11]. Such as spot light projects a narrow, intense beam of light directly on to a place or person. From the perspective point of view the spot lights can make each table clearer, focused, warmer, and concentrated than in the light of the energy savers.

As defined by Robson, tabletops are often spot lit to define territory and offer a sense of personal space [11], this technique was considered effective and table tops were illuminated with spot lights, that technique also extended the stay of patrons longer in the restaurant [12]. Spot lights are more economical in cost in the long run as the illumination power of compact fluorescent energy saver bulbs got dim by their continuous use [13], and must be changed after a specific period of time which increases the design cost. A study published in Engineering and Technology magazine concluded that energy efficient light bulbs lose on average 22% of their brightness over their lifetime [14].

Chandeliers come in the category of decorative lighting fixtures which create attractive focal points for the eye, as well as contribute to an informal, relaxed ambience [6]. The use of chandeliers provides comfort, safety and bright light. A good lighting design is also considered which has a central lighting source [15]. The chandeliers being used to rich the interior; they gave a feeling of warmth, brilliance and specialty. They were being used from many decades and the trend did not get out of the interiors.

Led rope light has an ability to enhance the space with custom accent lighting projects unique ability to flex which allow you to bend brighter, last longer, more energy efficient than standard incandescent rope lights. These lights consume seven times less energy and lasts three times longer than other fixtures. According to IESNA Lighting Handbook, 8th edition, the recommended light level for task area dining is 15 footcandles, while the recommended light level for general area dining is 10 footcandles [16][17]. The objective of the study is to find out the impact of economical luminant environment on PTOR in the restaurants. The energy efficiency and cost control, two factors of economical design are considered in the work.

Material and Method

In this experimental study, pre designed lighting was altered according to the economical requirements in the two moderate upscale restaurants, named Lahore View (R1) and Jasmine (R2). The luminant design in R1 consisted on rope lights and spot lights (Figure No.1) in the new design named “Contemporary Design” (CD) and previously installed energy savers and lamps were removed.



Figure 1 Lighting in R1

R2 was illuminated with chandeliers and spot lights (Figure No.2). Total of eight chandeliers were used, each having fifteen bulbs, the design named “Traditional Design” (TD).



Figure 2 Lighting in R2

RESULTS & DISCUSSIONS

The results showed (Table No. 1 & 2) that the cost of post-design lighting was higher than pre-designed lighting in both restaurants. The total expenditures of CD in R1 were less than TD in R2. The reason of high expense in R2 was the use of chandeliers. One chandelier was of Rs.5500 and total of eight chandeliers were used

The cost of rope lighting was not very high as compared to chandeliers. The total of 30 (sqft.) rope lighting was installed in the R1 and cost only Rs.8400. There was a major difference in the expenditures of lighting in both restaurants; the total expense of CD in R1 was RS.25440 (Table No.1) rather than in R2 which cost was Rs. 64200 (Table No.2). The styled light fixtures, such as chandeliers, can be more expensive (Types of lighting) than basic ones. But if the design was liked by the

Table 1: Expenditure of Lighting Design in R1

Pre Design Lighting				(CD) Post Design Lighting			
Item	Qty.	Price/ Piece	Total (Rs)	Item	Qty.	Price/ Piece	Total (Rs)
Energy Savers	24	210	5040	Spotlights	18	280	5040
Lamps	6	2500	12000	Rope Lights(Sqft)	30	280	8400
Electrician & Others			6000	Electrician & Others			12000
Total Rs.		23040		Total Rs.			25440

Table 2: Expenditure of Lighting Design in R2

Pre Design Lighting				(TD) Post Design Lighting			
Item	Qty.	Item	Qty.	Item	Qty.	Item	Qty.
Energy Savers	20	210	4200	Spot Lights	15	280	4200
Lamps	5	2500	5000	Chandeliers	8	5500	44000
Electrician & Others			5500	Electrician & Others			16000
Total Rs.			14700	Total Rs.			64200

patrons and contributes in the profit of the restaurant, the expenses would be no matter as compared to outcome. It is also important for the theme of the restaurant to be completed at the last end without considering the expenses.

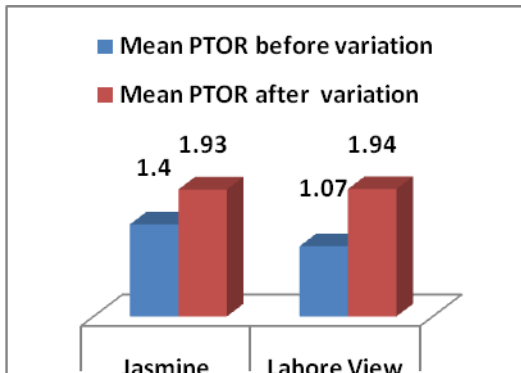


Figure 3 PTOR in R1 & R2

If comes to the second part of the study then the above graph (Figure No. 3), illustrates that patron turnover rate (PTOR) in both restaurants increased after making changes in lighting of the restaurants. In R1 the PTOR increased from 1.07 to 1.94 with net increase 0.87 due to contemporary lighting design and in R2 the PTOR increased from 1.4 to 1.93 with net increase 0.53 due to traditional lighting design. It may conclude that both contemporary and traditional lighting designs attracted the patrons and increased the PTOR but contemporary lighting design in R1 was more attractive to patrons to come there.

CONCLUSION

The results concluded that the economical luminant environment can make the business to flourish by attracting the patrons towards it. It may also conclude that high expenses do not guarantee to raise the profit level but the design of luminance, liked by patrons. The flow of patrons is also depicted through a diagram below that more patrons are coming towards CD than TD (figure 4).

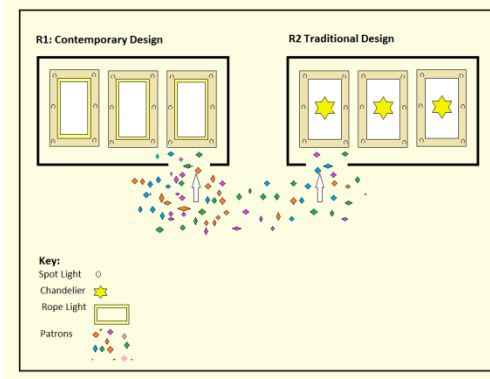


Figure 4 Ceiling Plan of R1 & R2

The conclusion is that R1 was more economical in energy efficiency plus cost control and PTOR also increased in that restaurant more than R2. The economical luminant design can adds to the PTOR.

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REFERENCES

1. Mohsin, D. Service Quality Perceptions: An Assessment of Restaurant and Cafe Visitors in Hamilton, New Zealand. *The Business Review, Cambridge*, 2, 51-57 (2005).
2. Philips, D. *Lighting in architectural design*. New York: McGraw- Hill.(1964).
3. Kotler, P., Atmospherics as a marketing tool, *Journal of Retailing*,49K(4):p. 48-64,(1974).
4. Veitch, J. A. Psychological processes influencing lighting. *Journal of Illuminating Engineering Society*, 30(1), 124-140.(2001).
5. Milliman, R. The influence of background music on the behavior of restaurant patrons. *Journal of Consumer Research*, 13(2), 286-290.(1986).
6. Ciani, A. E. A study of how lighting can affect a guest's dining experience. Iowa State University, Graduate Thesi and Dissertation. *Digital Repository@ LAwa State University*.(2010).
7. Southern, H. University student's perceptions of lighting and preferences for the setting and social arrangements in contrasting dining.(2005).
8. Flynn, J. E. Concepts beyond the I.E.s framework. *Lighting Design and applications*, 1(3), 4-11.(1973).
9. Ozturk, L. D. The effect of luminance distribution on interior perception. *Architectural Science Review*, 43(3), 233-236.(2003).
10. Jay, P. A. Review: Subjective criteria for lighting design. *Lighting Research and Technology*. 34(2), pp. 87-99.(2002).
11. Philips, D. *Lighting in architectural design*. New York: McGraw- Hill.(1964).
12. Schirmbeck, E. *Restaurants - Architecture and Ambience*.(1983).
13. Stuttgart:Architectural Book Publishing Company.
14. Robson, S. Turning the tables: The psychology of design for high-volume restaurants. *Cornell Hotel and Restaurant Administration Quarterly*, 13(40), pp. 56-58.(1999).
15. Energy-saving-lightbulbs. (n.d.). Retrieved 07 23, 2014, from www.dailymail.co.uk/news/.../Energy-saving-lightbulbs-dimmer-time.ht
16. Types of lighting. (n.d.). Retrieved May 5, 2013, from <http://www.americanlightingassoc.com/lighting.../3-Types-of-Lighting.asp...>
17. Jay, P. A. Review: Subjective criteria for lighting design. *Lighting Research and Technology*. 34(2), pp. 87-99.(200

