

# VARIATION IN LUMINANCE, ITS LIAISON ON PATRON TURNOVER RATE AND REVENUE IN MODERATE UP-SCALE RESTAURANTS

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**ABSTRACT:** Light is a very imperative element of any interior, especially in commercial places. It is a big responsibility of architects and interior designers to use maximum light according to task requirements of the palces. The light enhances the interior and creates ambiance when used in the restaurants. The objective of the study is also to find out the impact of variation in luminance on patron turnover rate (PTOR) and on revenue in the restaurants. The study is conducted in two moderate up-scale restaurants, named Lahore View Restaurant (R1) and Jasmine Restaurant (R2). The PTOR is compared within the previous lighting (L1) and new planned lighting (L2), the first plan Contemporary Lighting (CL), consisted on spot lights and rope lights is implemented in R1 and the second plan, named Traditional Lighting (TL), consisted on spot lights and chandeliers is implemented in Jasmine Restaurant (R2). The data of patron numbers is collected on daily basis and calculated by applying a formula, the detail of revenue is taken from restaurants' administration. The SPSS 20 is used to find out mean, standard deviation and paired sample t-test for the conclusion. The results conclude that variation in luminance increases the patrons' turnover rate which also raises the revenue in both of the restaurants.

**KEY WORDS:** Luminance, Liaison, Patron, Turnover, Rate, Revenue, Moderate Upscale Restaurant

## INTRODUCTION

Researchers have stressed the need to develop and plan the environment of retail interiors [1, 2, 3, 4, 5, 6] according to the standards and users' requirements [7]8. Restaurants are also considered revenue generating places as to design carefully to get more profit. The luminance is also very much important in the restaurant environment [9] and it has a vital impact on patrons [10,11,12,13,14,15] to decide to come again or on their turnover rate [16,17,18,19,20,21,22,23] and that attitude ultimately increase in revenue [17,18,19,20,21]. The availability of the designs and features of the lighting fixtures also raise the need to investigate different lighting situations in the restaurants. The focus on patrons' willingness to come, also raise the need to plan research on a combination of light, restaurant and patrons' number and revenue.

There is also a need for the study because of significant increase in the modernization of dining patterns, now patrons are not in hurry to come to eat in restaurant but they wish to spend time there for pleasure, comfort and relaxation. They come there to get a place where the environment would provide some kind of positive energy in the form of food to satisfy hunger and visibility of pleasant interior in provided light. This raises the need for restaurateurs not only to make the food special but to consult the designers to keep them in the race of future survivors by planning the restaurant interiors. A number of researches conducted in respect to establish a physical environment which satisfy patrons and increase in their turnover in the restaurants such as by ambience, interior, windows, themes, wall finishes. But luminance is considered to a limited context as a factor to impact on patrons especially in restaurants of Pakistan. The researcher tried to explore the field by following the way of Flynn, the fundamental researcher of light in real environment and his fellow researchers such as Spencer, Martyniuk and Singer. The researcher has planned the objective to find out change in the patron turnover rate and generated revenue after variations in luminant environment in the restaurants.

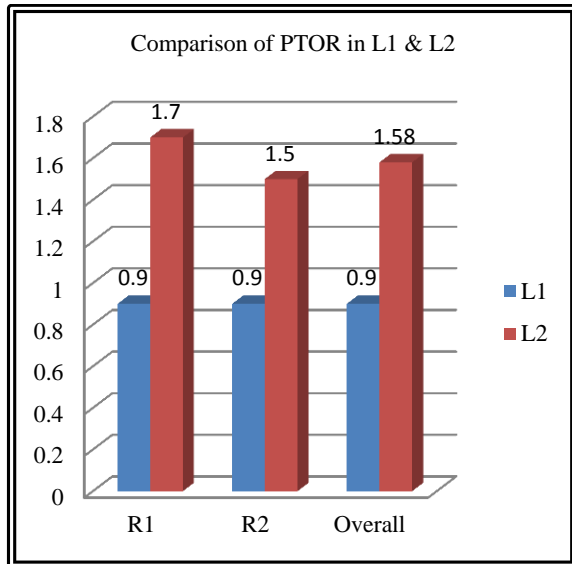
## MATERIAL AND METHOD

Two moderate upscale restaurants, named Lahore View Restaurant (R1) and Jasmine Restaurant (R2), were selected for the study, and two different lighting plans were implemented in each of the restaurant. A new lighting plan, named Contemporary Lighting (CL) was used in Lahore View Restaurant (R1) in which spot lights were combined with rope lights. The rope lights were used as decorative element for aesthetical aspect. The other new lighting plan, named Traditional Lighting (TL) was used in Jasmine Restaurant (R2), which consisted on spot lights and chandeliers. The chandeliers were used as a decorative element to add aesthetical aspect in the restaurant.

The data for the number of patrons was collected in the month of August 2013 for previous lighting (L1) then in the starting of September 2013 new planned lighting was implemented in both restaurants and after 22 days of new lighting the survey was again conducted in October 2013 in new planned lighting (CL and TL) in R1 and R2. The record of number of patrons coming to the restaurants, from 7pm to 10 pm, was maintained in a note book. The formula was used to find out PTOR which deals with the seating capacity in each restaurant and the patrons coming to the restaurant. According to the formula, total numbers of patrons seated (dined) in the restaurant were divided by the total number of seats available in the restaurant. The revenue record was also collected from restaurant administration.

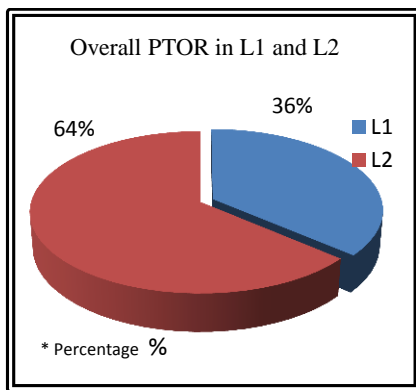
## RESULTS AND DISCUSSION

The results concluded in two phases, first the relationship of lighting with PTOR and then relationship of lighting PTOR and revenue was analyzed. The Statistical Package for Social Sciences (SPSS 20) was used to find out mean, standard deviation and paired sample t-test. The results were presented in the tabular and graphical form.



**Figure 1** Separate and Overall PTOR in Both of the Restaurants

The above figure 1 illustrates that both contemporary and traditional lighting plans (L2) attracted the patrons than previous lighting (L1). This also concludes that overall there is an increase in PTOR after variations in lighting.



**Figure 2** Overall PTOR in Previous Lighting (L1) and New Planned Lighting (L2)

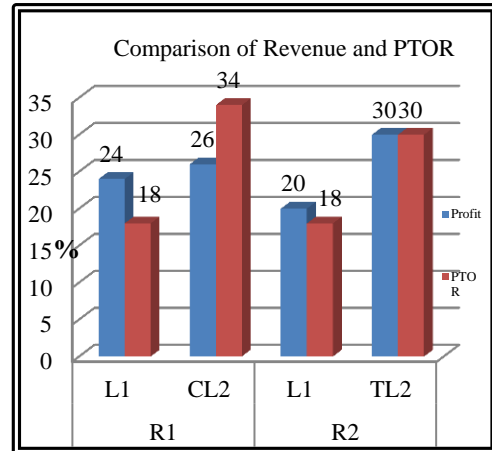
According to the percentages shown in figure 2 the rate of patron turn over (PTOR) in previous lighting (L1) is 36% and in new planned lighting (L2) is 64% which concludes that PTOR increased when lighting changed.

In the second phase, it was analyzed that variation in lighting may also impact on revenue. The revenue of the restaurant depends on daily savings collected from the patrons so there can be a strong relation of revenue and patrons' number.

**Table 1** Revenue and PTOR in the Resturants

Restaurant	Lighting Plans	Revenue (Rs.)	PTOR
R1	L1	379178	0.9
	CL	415573	1.7
R2	L1	319430	0.9
	TL	489400	1.5

The table 1 shows that the revenue is high in new lighting, the revenue in R1 (Lahore View) is Rs.379, 178 and PTOR is 0.9 in L1 (Previous Lighting) and Rs.415, 573 as PTOR is 1.7 in L2 (New Lighting). The revenue in R2 (Jasmine) is Rs.319, 430 and PTOR is 0.9 in L1 (Previous Lighting) and Rs.489, 400 as PTOR is 1.5 in L2 (New Lighting) so there is a significant relationship between variation in lighting, PTOR and revenue, both increased with variation in luminance. When the lighting changed in the restaurants the revenue as well as PTOR also changed.



**Figure 3** Comparisons of Revenue and PTOR during L1 and L2 in Both of the Restaurants

The figure 3 shows the differences in percentages that how much change occurred in revenue in respect to the PTOR. The revenue and PTOR are described respectively as in R1 revenue raised from 24% to 26% and PTOR from 18% to 34%. In R2 revenue raised form 20% to 30% and PTOR from 18% to 30%. The revenue increased more in TL (30%) but PTOR increased more in CL (34%) than other lighting plan. But collectively revenue rose in the new planned lighting as well as PTOR.

**CONCLUSION**

The study concludes that the luminance can be a strong factor to raise patron turnover rate as well as the revenue in moderate upscale restaurants. When the luminance was altered with new lighting plans the both PTOR and revenue increased which shows that the restaurateurs and interior designers must plan luminance of the restaurants very carefully because it is an ultimate factor to raise the business. As Pakistani food industry is contributing to nations' revenue, it must be given attention especially to lighting because 80% information is taken visually [24]. The study explored only a limited design line which could be extended widely according to the budget. The similar lighting plans can be repeated in other types of restaurants than moderate upscale restaurants.

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