Journal of Civil Engineering and Environmental Technology
Print ISSN: 2349-8404; Online ISSN: 2349-879X; Volume 2, Number 3; January-March, 2015 pp. 239-242
© Krishi Sanskriti Publications
http://www.krishisanskriti.org/jceet.html

Mall Culture in India: Comfort Perception by Employees and Customers of Shopping Malls

Ms. Supriya

(PhD Scholar, Senior Research Fellow, Department of Resource Management and Design Application, Lady Irwin College, Delhi University)
E-mail: 6.supriya@gmail.com)

Abstract—*A shopping mall (or simply mall), shopping center, or shopping arcade is a building or set of buildings that contain stores, and has interconnecting walkways enabling visitors to easily walk from store to store. The walkways may or may not be enclosed. The concept of shopping malls first appeared in 1950s. The credit towards invention of modern mall goes to Australian born architect and American immigrant Victor Green. The concept of Retail as entertainment came to India with the advent of malls. Mall fever has touched every facet of Indian society. Whatever is the income stratum of consumers, malls make no distinction in proffering most-revered national and global brands.*

In the present scenario, making the biggest malls with top class retailers is not the key to success. A cool and refreshing environment is required which makes the shoppers to forget all worries of the day. The rapid growth of population and economic development has put severe stress on the natural resources, infrastructure and environment of the country. This paper is an effort to understand energy consumption for facilities and services in selected malls and assess the experience of comfort level of employees working in the malls as well as customers visiting the malls.

Keywords: *Shopping Malls, Energy Consumption, Carbon Emissions, Environmental Pollution, Facilities and Services.*

1. INTRODUCTION

The concept of Retail as entertainment came to India with the advent of malls. Mall fever has touched every facet of Indian society. Whatever is the income stratum of consumers, malls make no distinction in proffering most-revered national and global brands. Shopping Mall refers to a set of homogenous and heterogeneous shops adjoining a pedestrian, or an exclusive pedestrian street, that make it easygoing for shopper to walk from store to store without interference from vehicular traffic. Malls are incorporated with a whole bank of lifts and escalators for smooth transit of shoppers. Malls are located in proximity to urban outskirts, and ranges from 60,000 sq ft to 70,000 sq ft and above. Malls offer a plethora of attractions-high profile shopping, impulse eating establishment, a glitzy and glamorous environment to discerning shoppers of more refined tastes, who are more concerned with quality and fashion and less concerned with budgets. Mall reveals six factors namely comfort diversity, luxury, mall essence, entertainment, and convenience which are a source of cynosure. The rapid growth of population and economic developments has put severe stress on the natural resources, infrastructure and environment of the country. There is need to design and develop the new buildings on sound concepts of efficient use of energy and also to apply suitable retrofit options to existing buildings that could substantially improve energy efficiency, reduce energy wastage and pollution levels, recycling / reuse of waste, improve quality and productivity of energy conversion processes.

2. METHODOLOGY

The study was carried out in 5 malls located in West zone of Delhi and was conducted in 4 phases-Interview with Key Facility Personnel, Facility Tour for Energy Consumption, Identification of feasible energy efficient methods, Experience of comfort level of employees working in the malls as well as customers visiting the malls.Information was gathered from the Key facility personnel managing the malls by case profile method, Customers visiting the malls and Employees working in the malls. 50 customers and 50 employees, 10 each from each mall were selected to make the sample as representative as possible in order to get their views on comfort and energy efficiency practiced in the malls.

3. STUDY FINDINGS

Profile of Employees Working in the Malls

The studyshows that in order to manage and maintain the malls varied personnel were employed. Among the selected sample Sales Executive were maximum (44%) followed by Customer Care Associates (8%), HR Executives (7%) and then Quality Analyst, Engineers, Estate and Facility Managers. Roles and responsibilities in the mall varied with their designation, however, they remained in the mall for 8-12 hours approximately which seemed a very demanding time schedule. For people visiting the malls it may seem highly glamorous at the face of it but for the employees it is more work than play.The age profile of the employees shows that

majority of the employees (60%) working in the malls were in the age range of 15-25 years and 40% were in the age-group of 26-58 years. The fact in mall one requires to stand for long hours younger employees are preferred who have higher energy levels, while upper age staff occupies higher positions in the malls. Almost an equal number of males and females were employed in the malls

4. PROFILE OF CUSTOMERS VISITING THE MALLS

It can be observed that the customers visiting the mall had varied professions. Majority of customers were teachers (30%) and house-wives (24%) followed by engineers, students, doctors, bankers, self-employed and retired persons. Analysis revealed that the majority of customers comprised of people in the age-group of 37-47 years(38%) followed by a younger age-group ranging from 15-25 years (36%). The next in the line were customers in the age-group of 26-36 (20%) years while just 6% of customers were more than 47 years of age.

5. COMFORT LEVEL OF EMPLOYEES AND CUSTOMERS

Comfort level of Employees and Customers was evaluated on 7 parameters to understand if these groups of persons felt comfortable inside the mall premises or not, despite so much expenditure incurred for creating a comfortable ambience by mall management.

6. VISUAL COMFORT

Response of customers and employees towards visual comfort is shows that since, the employees have to be present in the mall throughout the day too flashy lights causes discomfort to the eyes as the pupils remain constricted for long hours so the eyes feel tired. As observed in the malls optimum illumination level was resulted in visual comfort experienced by 90 % employees while 94% customers inside the malls. The reason for some mall employees (10%) not feeling so comfortable could be long hours spent by them inside which might lead to visual fatigue after a certain point of time. While in the case of customers it could be due to their personal profile such as age.

Experience of Glare As all of us are aware that the malls have a lot of flashy lights because the focus is on capturing the customer's attention and sell the products which may create a sense of glare in the environment.16% of the employees reported that they cannot work for more than 1-3 hours while 12% of the customers experienced glare in the malls due to which they felt fatigued after being inside the malls for 1-2 hours, probably because these customers were senior in age and hence more sensitive to sharp lights.

Experience of Heaviness in Eyes

Though customers as well as employees felt visually comfortable and majority did not experience any glare yet a high proportion of both the employees as well as the customers experienced heaviness in the eyes (72%) which could have resulted due to high illumination levels in certain areas of the malls. Over exposure to high illumination levels for long duration leads to visual fatigue and difficulty in clear vision due to pupils getting very small in size and affecting visual activity. As reported by both customers and employees there were certain sections in the malls such as the Customer Care department, display areas where they faced more amount of glare. The reason for the employees experiencing more glares could be long time spent at the same place. Same number of customers and employees were experiencing heaviness in the eyes from minimal to moderate level in spite the fact that the customers were spending less time in the mall as compared to the employees who occupy the mall from 10-12 hours a day

7. ADEQUACY OF DAYLIGHT

As regards the daylight, structural features of the mall suggested large windows overlooking from the front façade. However such windows were not there on all the four sides of the malls, whereas such windows could admit ample daylight in the interiors of the malls.Moreover, daylight availability within the shops was minimal as most of the shops did not have windows, therefore, had to depend upon artificial sources of light. Due to more number of light sources there was experience of heaviness and glare in the eyes felt by the customers and employees in the malls. The daylight was found to be adequate by 68% of the customers and 54% of the employees.Employees as well as customers also felt that due to inadequate daylight available in the interiors they felt uncomfortable as an artificial ambience prevailed all the time. 46% of the employees and 32% of customers felt that the daylight was also inadequate.

8. THERMAL COMFORT

Thermal comfort is a very important component of comfort. Extreme warm or extreme cold, both situations lead to discomfort for the occupants. In the malls most of the employees as well as the customers felt thermally comfortable i.e., 54% employees and 84% customers. However, a substantial percentage, i.e., 46% of employees felt the thermal discomfort probably because at times the heating or cooling was over effective leading to excessive warmth or excessive cold. At certain times especially in the evenings or festival seasons when malls were crowded there was suffocation experienced by the customers as well as the employees due to enclosed spaces. Some employees also reported that A/C ducts were not appropriately located as per their shop layout. While at certain parts the heating or cooling was ineffective, at the

other it was over effective. No electronic thermostats for A/C were used to maintain temperature at a comfortable level. Neither the malls nor the shops were using any sensors for any of the facilities like temperature control, illumination levels, vertical movement, doors etc.

9. WATER ADEQUACY

Running water supply was found in all the five malls and very effective motors were employed to suck water leaving the undergrounds dry. 46% of the customers and 26% of the employees found water in winters very warm. At the time when Delhi was freezing with cold in winters the temperature of water in the malls was hotter than tolerable temperature, i.e., more than 80 degree Celsius.

10. OVERALL COMFORT OF EMPLOYEES AND CUSTOMERS

Comfort level of customers and employees was accessed as moderate to high based on their responses. **The frequency distribution of employees and customers** as shown in table reveals that majority of customers (52%) and employees (54%) experienced high comfort.

Table 1: Distribution of Frequencies as per Comfort Experienced by Respondents

Comfort Level	Customers	Employees
Moderate Comfort	24(48%)	23(46%)
High Comfort	26(52%)	27(54%)

However, a substantial percentage of customers as well as employees experienced moderate comfort levels probably because they experienced heaviness in eyes due to too much glare and illumination levels above recommended level at some places inside the malls. This caused their pupils to constrict leading to difficulty in visual activity.

T-test was computed to find out if there was any difference in the comfort level of the employees and the customers. Analysis indicated that there was no difference in the comfort level of two groups, i.e., customers and employees. Majority of the customers as well as employees felt comfortable on various parameters including illumination levels resulting in visual comfort, adequacy of day light, thermal comfort and water adequacy.

11. PERCEPTION OF ENERGY WASTED BY FACILITIES AND SERVICE BY THE CUSTOMERS AND THE EMPLOYEES

Energy Wasted for Lighting Customers (40%) felt that energy was wasted for lighting from moderate to high levels whereas 28% of the employees felt that energy could be better utilized for lighting. Majority of the customers as well as the employees felt that either energy was not wasted or very little was wasted for lighting. Customers could not appreciate high lighting levels being used for display of certain products as probably they were comparing illumination levels practiced in their own environment whereas the employees were used to such optimum levels of illumination. Further they understood the significance of lighting for various purposes especially display of products particularly for special occasions or festivals.

Energy Wasted for Air-conditioning Very few customers (14%) as well as employees (10%) felt that air-conditioning was absolutely perfect, i.e., did not incur excess energy consumption. Majority of customers as well as employees felt that that a lot of energy was being wasted either somewhat (16%) or moderate (42%) or highly (16%).

Similarly, the employees also felt that energy was wasted ranging from somewhat (38%) to highly wasted (18%). The reason for their perception was that majority of them found the temperature very low while at times they felt that the temperature could have been a little higher but since electronic thermostats were not installed only a certain constant temperature could be maintained on a long term sustainable basis. As was also observed air-conditioning used the maximum power which ranged from 2,03,220-10,62,045 KWH per month.

Energy Wasted for Escalators Equal percentage of customers as well as employees (18%) felt that escalators were extremely important and there was no energy wasted by them. There were 2-8 escalators in each mall. Respondents were of the opinion that all escalators need not be operational all the time and it could be organized in such a manner that half could be used alternatively or used in relation to the use frequency and number.

Energy Wasted for Elevators Employees seemed to favor elevators though majority of them felt that there was somewhat (30%), moderate(38%) and high (10%) amounts of energy being wasted for elevators. While on the other hand, 40% of the customers felt that energy was being moderately wasted whereas 16% thought it was highly wasted. Observation of vertical movement of the sample showed that larger numbers of customers were traveling by escalators as compared to the elevators. While employees preferred elevators to escalators probably because they had to carry materials to different floors of the malls.More customers felt that elevators were energy wasters probably because they could not use the elevators much due to long waiting time and limited capacity whereas larger number could access the escalators without any delay.

Energy Wasted for Ventilation It is a very important factor for maintaining acceptable indoor quality in the building. There were fresh air fans in order to provide good air

exchange ratio within the malls located at all levels. There were heavy duty exhaust fans to take away the polluted air outside the interior premises. Majority of the customers (70%) and employees (54%) felt that no energy was wasted for ventilation of the interiors. However, a significant percentage of employees (34%) and customers (26%) felt that the energy was somewhat wasted through mechanical exhaust mainly in the kitchens (in the food courts and restrooms).

Energy Wasted for Water Supply System Majority of the customers (56%) as well as employees (82%) could not realize that energy was being consumed or wasted for water supply system in the malls. Some of the customers and very few of the employees could realize the fact that energy was being wasted for water supply system either somewhat or moderate. Kitchens were also utilizing a lot of water for cooking and washing. A lot of water was also found to be wasted for cleaning purposes wherein large garden pipes were used for washing spaces and water particularly the outdoor paving on the site for a cleaner look.

Energy Wasted for Security This being a very important aspect in the modern scenario. Information technology devices like close circuit cameras and smoke detectors have become an essential feature of all the big buildings which serves thousands of people each day. Majority of the customers felt that security devices do not involve excessive use of energy (66%) while a very few felt that energy was being wasted through security devices. Three malls were found to have CCTV and most of the malls were using smoke detectors for ensuring the safety of occupants.

12. CONCLUSION

According to majority of customers as well as employees a lot of energy was wasted by HVAC system followed by escalators and elevators. Most of the customers and employees could not realize the amount of energy wasted for water supply. They perceived that security arrangements did not consume much amount of energy. This revealed that perception of respondents, both customers and employees was not very realistic and their perceptions were based on visible parameters. They could not foresee the hidden costs behind a facility or service.

13. RECOMMENDATIONS

1) 3 to 5% less energy will be consumed for each degree, if air conditioner is set above 22 degree Celsius. The temperature of air-conditioners should be set at 25 degree for most comfort and reduced costs.
2) Use reflective tiles or insulation on the roof to keep the interiors cool.
3) Install Variable Speed Drives for plumbing system so that they are not left on for long hours.
4) Provide operable windows with sealing gaskets (packing used for making joints air-tight) to allow natural air inside so as to cut down energy cost on ventilation.
5) Enhance outdoor lighting system efficiency by using various energy efficient light sources such as the newer generation of fluorescent tube. Sodium vapor lamps and metal halide lamps can primarily be used for public area lighting.
6) Use renewable energy sources such as solar energy for water heating, cooking purposes, lighting rather than just depending solely on electricity.

REFERENCES

[1] CADDET. (1995). Saving energy with Efficient Commercial Buildings, Energy Efficiency- Maxi Brochure 01.

[2] Govt. Of NCT of Delhi. (2007). Energy Conservation Action Plan, 2007-08. Delhi: Energy Efficiency and Renewable Energy Management Centre.

[3] Knight A. P. (2007). Your Energy Savings- A handbook, Illinios: U.S Department of Energy.

[4] Kumar P., Tyagi K. A. (2002). Managing Energy Efficiently in Hotels and Commercial Buildings. New Delhi: The Energy Resource Institute.

[5] Lather.A.S. and Kaur T., Shopping Malls: New retail formats keeping pace with the shopper's mood JIMS 8M, pp. 22-27, 2006.

[6] Majumdar M. (2004). Energy –efficiency in Green Buildings- An Integrated Approach.

[7] Roy.K.and Malleria Ahoy., available at: http://www.coolavenues.com/cafe/articles/kisholoymalleria-1.php

[8] Sankar A. R. N., ―Shopping Malls: A New Shopping Experiencel, ICMR Case Collection, ICFAI Centre for Management Research, 2005.

[9] Sharma N. Y. (2007). Energy Conservation, Audit and Accounting, pp. 68-83, New Delhi: IGNOU.