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Assessment of the Malls In Terms of Comfort Condition for Consumers

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Abstract
Malls which numbers are lately increasing has been a part of social and cultural way of life and host a lot of visitors. Malls are preferred excessively because it has same indoor climate condition all the year round. Target: In this study there will be an assessment through analyzing the physical comfort conditions of two malls in Turkey. Content: While assessing the malls in terms of comfort conditions, indoor temperature, air quality, lighting, aural comfort will be reviewed. Method: Going to the malls, observing the area one-to-one, making the fieldwork, benefiting from sweep literature. Conclusion: to assess the malls in terms of comfort conditions and offer a suggestion about malls that will be designed.

Keywords: Mall; User Satisfaction; Physical Comfort Conditions.

1. Introduction

Today, although shopping malls make shopping, social activity is frequent; In addition to shopping, such as cinema, playgrounds, dining areas, it has become a social area. Considering that first opened in 1988 in Turkey today mall 416 (Aydin, 2020) with the mall is now opened in every neighborhood. The opening of the shopping malls affects the urban settlement in that direction. It is observed that the building settlement in the shopping mall is rapidly increasing and the population density is rapidly increasing. In developed countries, 90% of people's time is spent indoors (Working Group For Sustainable Construction, 2004). It is thought that it is not healthy in terms of human comfort in which we look at shopping malls, most shopping malls have natural ventilation, natural sunlight, etc. there is no environmental impact.

At the beginning of the study; "The architectural design principles of the space have an effect on the subjective opinions of the users about indoor comfort conditions (thermal comfort, indoor air quality, natural ventilation, daylight, natural lighting, auditory comfort)". The perception of comfort is affected not only by personal and environmental factors but also by the psychosocial environment (Haghighat and Donnini, 1999; Melikov et al., 2005; Nakano et al., 2002; Newsham et al., 2009; Norbäck, 1995; Pellerin & Candas, 2003; Smedje et al. 1997; Yamtraipat et al. 2005). In this study; It is aimed to perform one-to-one observation and field study and to use literature reviews by going to some closed shopping centers. In this way, we will find the answer to the question of whether there is comfort for people in closed shopping centers.

2. Shopping Centers in the world and in Turkey, Historical Development

In terms of historical development, the first mall in the world was opened in Minnesota in the United States in the 1950s. The building was designed by Australian architect Victor GRUEN.

Figure 1. Southdale Shopping Center (Çelikkol, 2015).

Victor Gruen, the first shopping center designer; He argued that these centers have the potential to become new social spaces for the cities as they contain an important activity such as shopping. These spaces have become an escape point for people who are overwhelmed by traffic problems, routine of work life and suffocation of daily life (Aslan, 2009: 148).

Figure 2. Southdale Mall, Minneapolis (Çelikkol, 2015).

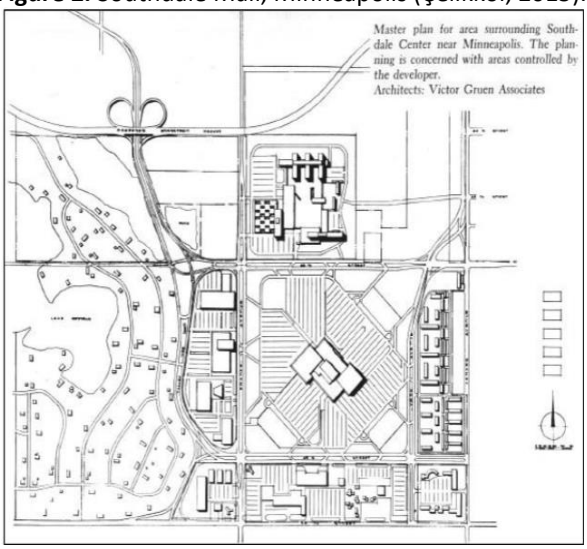

Figure 3. Southdale Mall plan, Minneapolis (Çelikkol, 2015).

Although Gruen's purpose of designing the shopping center was to increase pedestrian traffic and socialize the American people, he found that he had deviated from this goal in the future. It deviated from the idea of pedestrianizing the suburbs where Gruen set off. Shopping malls have become the symbol of the unnecessary consumption cycle, agglomeration and uniformization rising in the middle of the sea of cars.

We look at the first shopping center in Turkey in 1988 with the support of the state architect we see the Galleria Shopping Center, designed by Hayati Tabanlıoğlu groove.

Figure 4. Galleria Shopping Center, Istanbul

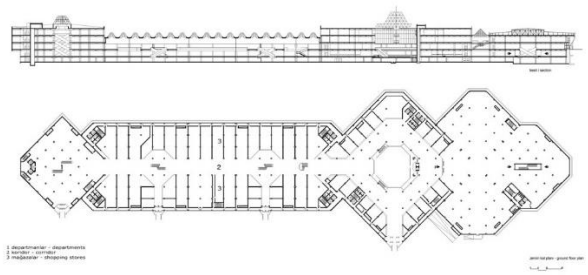

Figure 5. Galleria Shopping Center Plan

After concluding the Galleria shopping center, the number of shopping centers in Turkey has started to increase quickly.

3. Studies on the Reasons of Preference and Comfort Conditions of Shopping Centers

The aim of Victor Gruen, who designed the first modern shopping center, was to make people socialize more and to prefer pedestrian traffic rather than vehicle traffic. However, the reasons for choosing shopping malls today have changed. Although shopping malls continue to be used to socialize, it has been observed that it increases vehicle traffic more and directs society to consumer society. Since shopping malls respond to every need of the person, these are; eating areas, electronic stores etc. It emerges as a reason for preference because it responds to all needs of people.

With its socio-cultural activities and perceived structure, shopping centers are beyond being the place where people come only for shopping. Shopping malls are both consumption places and social and cultural places. The consumer, who chooses the shopping malls among many shopping malls, acts with a certain symbolic meaning whether or not they make a purchase. In shopping centers, consumers are not only able to meet their needs, but also to determine status, enjoyment, show off, prove themselves, etc. The figures can be motivated by many motivational sources (Torlak, 2007: 146). With these aspects, shopping malls can evoke a desire to come again according to the satisfaction level of their visitors (Jackson et al., 2011: 1) and can positively affect the consumer decision processes in the current period (Wesley et al., 2006: 547).

When the studies on the effect of comfort conditions in the Shopping Centers on the place and the user are examined; thermal comfort (Ahmed et al., 2007; El-Adly, 2007; Chun and Tamura, 2005; Turley and Milliman, 2000; Chun and Tamura, 1998; Bloch et al., 1994); Thermal comfort, energy conservation and energy consumption (Lam et al., 2012; Fasiuddin et al., 2009; Abdullah et al., 2009); Indoor air quality (Bahnfleth and Kowalski, 2005; Li et al., 2001); indoor air quality and natural ventilation (Wong et al., 2003; Chowa et al., 2002); air conditioning installation (Hamlyn et al., 2012); Studies under the titles of daylight and natural lighting (Julietta et al. 2009) and auditory comfort (Çalışkan, 2010, Dökmeci, 2009, Chen and Kang, 2004, Demir, 2003) are prominent.

4. Field Study

In this part of the study, the satisfaction of the indoor physical comfort conditions of the users in closed shopping malls is evaluated. In the closed shopping center, four classifications that are effective on physical comfort conditions will be evaluated. Since it is not possible to evaluate physical comfort conditions in terms of all architectural design criteria, the interactions we have identified closely related to the physical comfort conditions determined in this study are also examined (Figure 6).

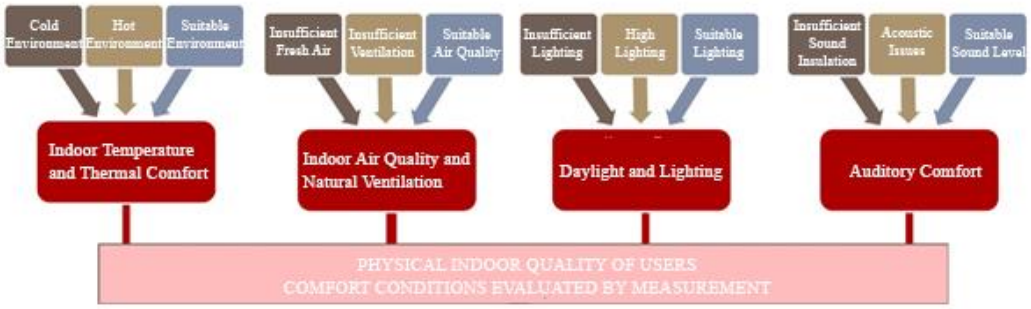

Figure 6. Parameters to be evaluated in terms of physical comfort conditions (Developed by Author).

Indoor Temperature and Thermal Comfort Status

Thermal Comfort refers to the situation felt as "satisfied with the thermal environment" (ASHRAE 55-1992 rev, 2003, ASHRAE 62-2001 rev, 2003). The indoor optimum temperature values accepted in terms of thermal comfort conditions are 22 °C - 27 °C in summer and 19 °C - 25 °C in winter.

Indoor Air Quality and Natural Ventilation Status

Indoor air quality is defined according to users' dissatisfaction (odor and sensory disturbances) status (CR 1752, 1998). It is accepted that there are no harmful concentrations of air pollutants and indoor air quality is provided in the environment that is satisfied by the majority of people (80%) (Frontczak, M., Wargocki, P., 2010).

Daylight and Lighting Status

Visual comfort is defined as a subjective situation stimulated by the visual environment (Frontczak, M., Wargocki, P., 2011). While handling physical comfort for users, there are also features that affect visual comfort. Visual comfort parameters of lighting; we can evaluate it as daylight amount, brightness distribution, glare amount, color of light, flickering rate of light, light level.

Auditory Comfort Status

Navai and Veitch have defined auditory comfort as a sense of satisfaction with acoustic conditions (Navai M, Veitch JA., 2003). Auditory comfort includes not only providing a good acoustic environment, but also identifying factors that prevent auditory comfort. The indoor noise limit value in shopping malls is 60 decibels (Ministry of Environment and Forestry, 2005).

4.1 Aqua Florya Mall

Figure 7. Aqua Florya Mall, Istanbul

Indoor Temperature and Thermal Comfort Status

Temperature observations were taken by observing the area and getting help from the technical staff of the shopping mall, and the user was found suitable for physical comfort conditions (Figure 8).

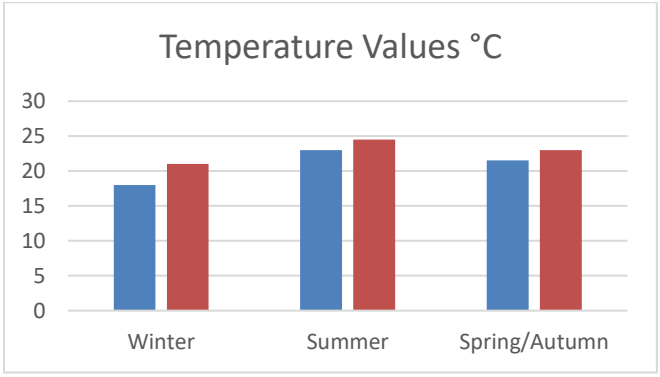

Figure 8. Mall temperature values average (Developed by Author).

Indoor Air Quality and Natural Ventilation Status

While observing in the area, we made an assessment based on the odor as the determining factor of indoor air quality on different floors. There is no natural ventilation. The discomfort rates are shown in the parking lot on the exhaust smoke gases of the vehicles and on the third floor in the dining area of the fast food and restaurants (Figure 9).

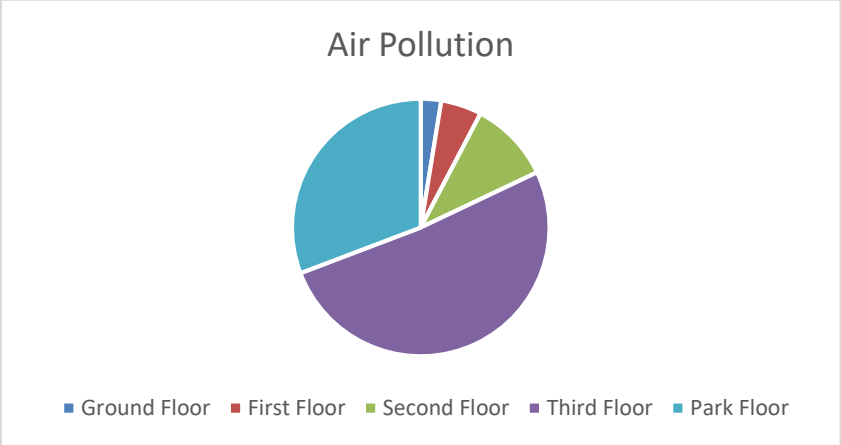

Figure 9. Mall air qualty values average (Developed by Author).

Daylight and Lighting Status

In the shopping mall parking lot where the light color used is observed by observing the area and with the help of the technical service staff of the shopping mall, the brightness of the light is increased due to the natural lighting coming from the terrace located on the ground floor and the third floor dining area; it was observed that the light flickering condition was not noticed. The light brightness value graph is shown in the (Figure 10).

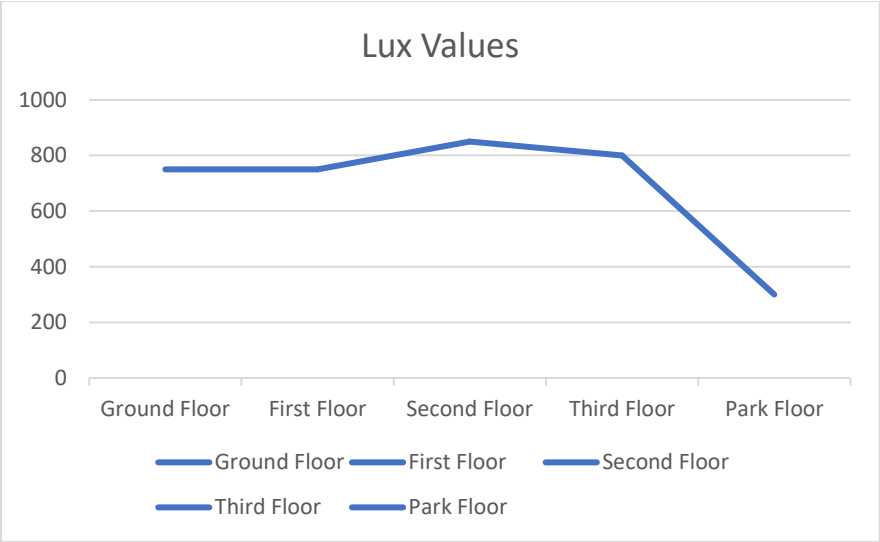

Figure 10. Mall light values average (Developed by Author).

Auditory Comfort Status

While observing in the area, it was determined that the sound intensities on different floors change depending on the human density and affect the auditory comfort. In the third floor dining area, where there is a high human density, the high volume of sound has been observed to disturb users in terms of auditory comfort. The indoor sound value is measured and graphically shown (Figure 11).

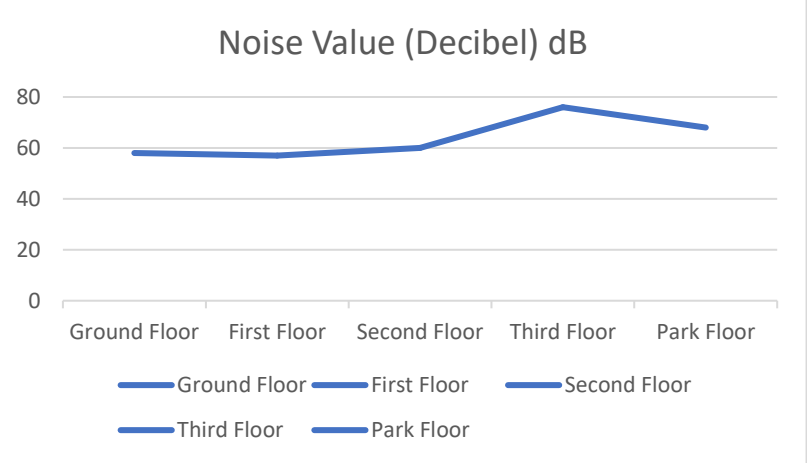

Figure 11. Mall sound values average (Developed by Author).

4.2 Park Afyon Mall

Figure 12. Park Afyon Mall, Afyon

Indoor Temperature and Thermal Comfort Status

Temperature observations were taken by observing the area and getting help from the technical staff of the shopping mall, and the user was found suitable for physical comfort conditions (Figure 13).

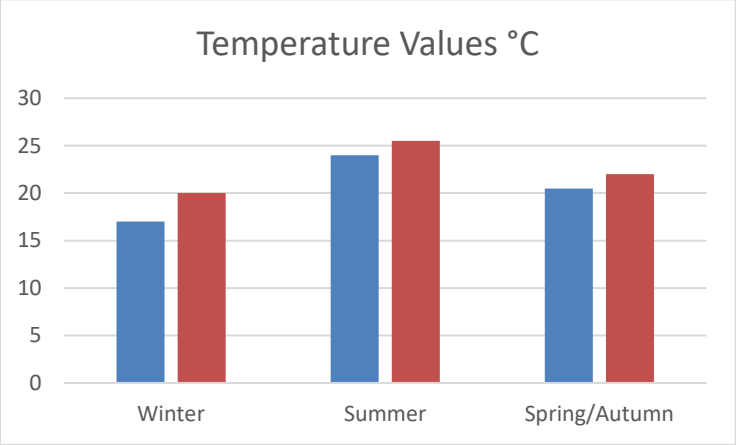

Figure 13. Mall temperature values average (Developed by Author).

Indoor Air Quality and Natural Ventilation Status

While observing in the area, we made an assessment based on the odor as the determining factor of indoor air quality on different floors. There is no natural ventilation. The discomfort rates are shown in the parking lot floor from the exhaust smoke gases of the vehicles and the fast food and restaurants in the second floor in the dining area (Figure 14).

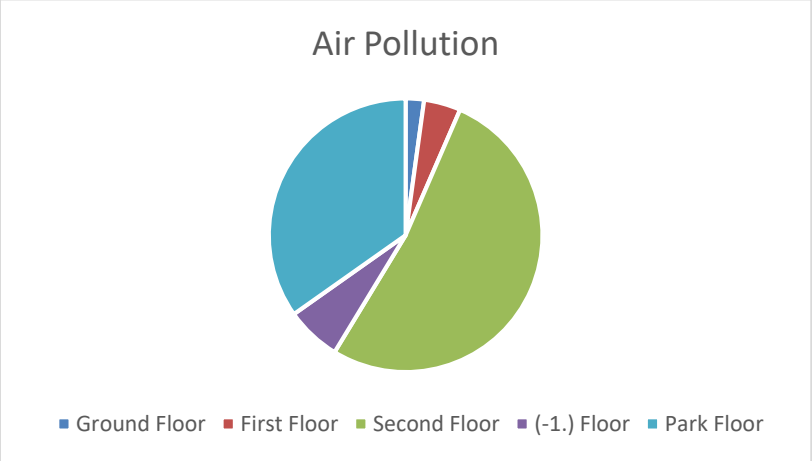

Figure 14. Mall air qualty values average (Developed by Author).

Daylight and Lighting Status

In the shopping mall parking lot where the light color used is observed by observing the area and with the help of the technical service staff of the shopping mall, the brightness of the light is increased due to the natural lighting coming from the terrace located on the ground floor and the third floor dining area; it was observed that the light flickering condition was not noticed. The light brightness value graph is shown in the figure (Figure 15).

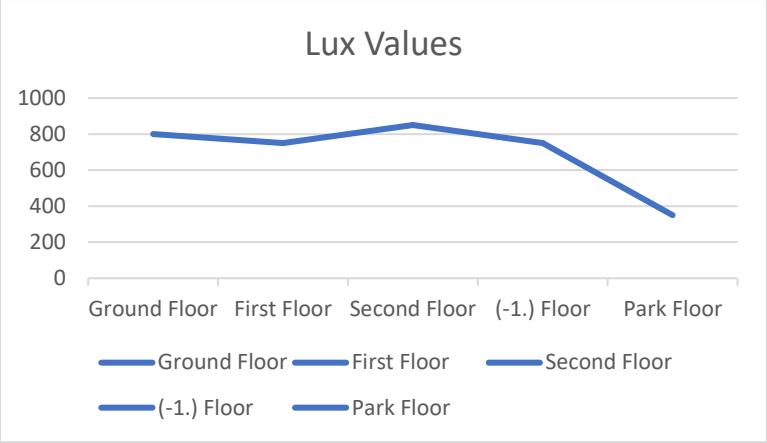

Figure 15. Mall light values average (Developed by Author).

Auditory Comfort Status

While observing in the area, it was determined that the sound intensities on different floors change depending on the human density and affect the auditory comfort. In the second floor dining area, where the human density is high, the high volume of the sound has been observed to disturb the users in terms of auditory comfort. The indoor sound value is measured and graphically shown (Figure 16).

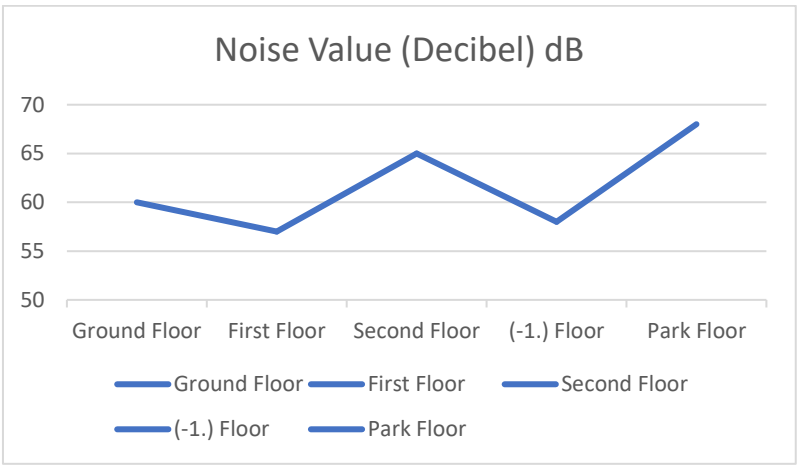

Figure 16. Mall sound values average (Developed by Author).

5. Conclusions

Today, it has become the fashion of today with its parking facilities, markets, shops, eating and drinking areas and children's playgrounds in closed shopping centers, which are in great demand by families and individuals in the summer and winter months. Closed shopping malls offer the opportunity to visit by the users in all seasons. In this study, methods such as material, observation, and on-site analysis related to the evaluation of closed shopping centers in terms of physical comfort of the users were applied. In the research results, optimum temperature, ventilation, lighting and auditory comfort were determined for the physical comfort of the users. At the same time, shopping areas and sizes vary and are arranged with different physical comfort conditions according to the human circulation. In this intensity, people, environment and structure are in constant interaction. It was observed that the circulation width and floor heights were maximized in the shopping mall planning in order to maintain the physical comfort and peace of the users. Although Victor Gruen, who designed the first shopping mall, was out of the conditions he intended, the popularity of shopping malls is increasing day by day. While considering the physical comfort of the users, it is necessary to consider the natural conditions. Although it is sufficient in terms of physical comfort in two shopping mall examinations, it is insufficient in terms of natural conditions.

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