A probe into satisfaction levels with respect to noise levels and temperature among office employees working in Chandigarh public and private sector offices

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Abstract

The Chandigarh city is the pioneer planned city of India having temperature range between 1 C to 45 . City is center of activities for States of Himachal, Haryana and Punjab. It is also centre of administrative activities of various States. The share of office going people is increasing in Chandigarh and needs special attention with regard to working conditions and productivity of organizations for which they work. There is a need to find out the satisfaction with respect to noise level and temperature among employees working in Chandigarh offices. A total of 660 employees from various offices of Chandigarh were recruited as sample. The age range of the sample was between 25 to 60 years. The questionnaire used was an adapted and modified version of already existing scales of occupants' satisfaction with indoor environment quality (IEQ) components of other buildings by different researchers. Results indicate that approximately fifty percent of the employees working in private and public sector offices in Chandigarh are satisfied with their office noise levels (disturbance and distractions) and temperature range (according to weather and airflow). It is important that the physical aspect of the workplace and satisfaction should be given its due importance.

Keywords: environment, noise level, temperature, perceived satisfaction, correlate, Design, Built environment

1.Introduction

The Chandigarh city is the pioneer planned city of India having temperature range between 1 C to 45 C. The city Chandigarh because of its unique concept is known as 'City beautiful'. It is one of the greenest cities of India with its 1400 nos. green belts / parks/ gardens. The quality of life is the consideration of people in Chandigarh. The maintenance of basic urban service is altogether different than the conventional old cities. Moreover this city is center of activities for States of Himachal, Haryana and Punjab. It is also centre of administrative activities of various States. The share of office going people is increasing in Chandigarh and needs special attention with regard to working conditions and productivity of organizations for which they work.

Noise is probably the most prevalent annoyance source in offices, and can lead to increased stress for occupants[1]. Yet, acoustics in most cases do not received the same level of design attention as thermal, ventilation and lighting as well as other architectural and engineering considerations. This can be justified in a Post Occupancy Evaluation [6], where acoustic quality is rated with as lowest satisfaction among other categories. According to Dyna sound Collaborative Studies of five major corporations, noise contributes the biggest proportion on the office environment distractions at 71%, followed by air (20%) [2].

In a 2004-2005 observational field study at a call center in Japan, Tanabe (2006) identified a 2.1% improvement in operator performance (average call response rate) per 1ºC decline in indoor

temperature for temperatures over 25ºC, supporting the need for individual temperature control. There is some evidence that high temperature (> 25.4 C) is associated with lower work performance. In general, warmer temperatures above 24.5-25.4 °C induced a decrement in performance. This effect on school work performed by children in the age from 10-12 years old was also seen by Wargocki et al.[9].

In India this is a new area of research. The physical aspects of the work environment do not always receive as much attention as the managerial and interpersonal aspects. There is a need to find out the satisfaction with respect to noise and temperature among employees working in Chandigarh offices.

2. Methodology

Sample

A total of 660 employees from various offices of Chandigarh were recruited as sample. The age range of the sample was between 25 to 60 years. The employees who were working for the last three years in a particular organization were considered for inclusion in this study. The minimum educational qualification of the selected subjects was graduation.

Questionnaire

The data collection instrument for this study was a structured questionnaire developed by the researcher with the help of experts. The questionnaire is adapted and modified version of already existing scales of occupants' satisfaction with indoor environment quality (IEQ) components of other buildings by different researchers. The questionnaire items were developed to reflect the satisfaction/comfort/productivity components of the office environment. The questionnaire for the study contained 44 total items pertaining to employees' general demographics and satisfaction with thermal, acoustic, and lighting conditions

Data Analysis

For result findings and in-depth analysis of the different components of office environment on the productivity of the office employees, descriptive statistics has been used. SPSS 16 software as research tool for data analysis was used for this research.

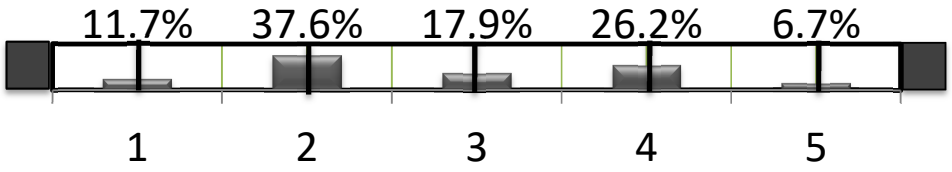
3. Results and Discussion

The respondents ask about the following questions regarding noise levels and temperature range in different public sector and private sector offices and evaluate the responses in terms of frequency distribution. There are four main questions which ask from the employees regarding office noise levels in their offices.

Noise levels

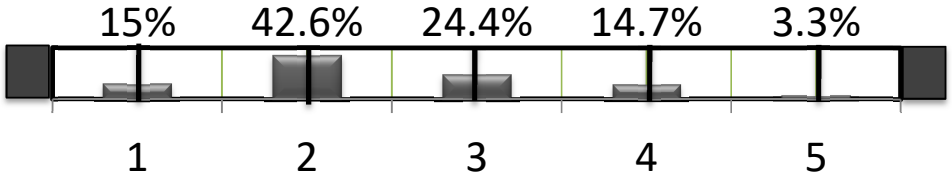
1. Work environment is quiet

11.7% Not at all ,37.6% To some extent , 17.9% Often, 26.2% Mostly, 6.7% Always



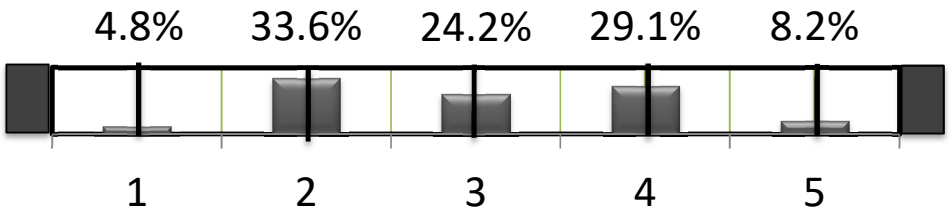
2. Able to have quiet and undisturbed time alone

15.0% Not at all, 42.6% To some extent, 24.4% Often, 14.7% Mostly, 3.3% Always



3. Workspace has many noise distractions

4.8% strongly disagree, 33.6% disagree, 24.2% neutral, 29.1% agree, 8.2% strongly agree



4. Noise free environment will increase my productivity

9.8%--10% , 16.2%---20%, 18.5%--30% , 15.6%--40%, 39.8%--50% or more

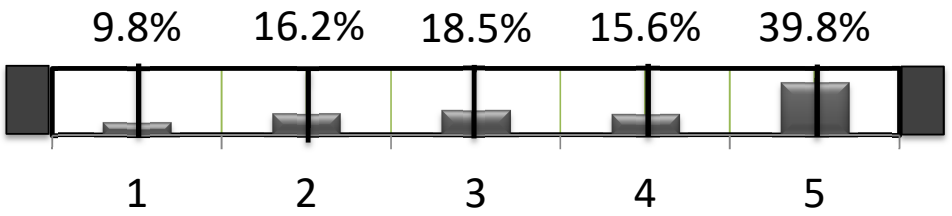


Table 1: Satisfaction with Noise in Office

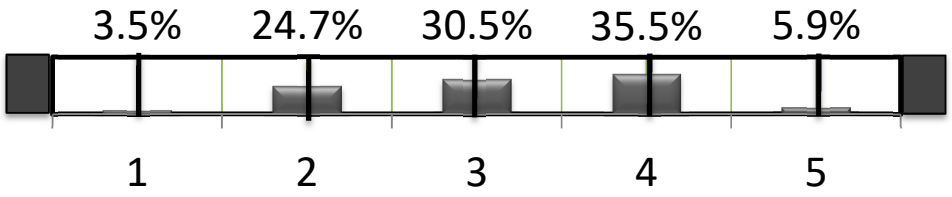
Question	Response(%)
Work environment is quiet	50.8
Able to have quiet and undisturbed time alone	42.1
Workspace has many noise distractions	37.3
Noise free environment will increase my productivity	73.9

Western research also supports importance of noise levels in offices. Sundstrom et al. reported that noise is probably the most prevalent annoyance source in offices, and can lead to increased stress for occupants[7]. In a 1995 building case study of an office building there was 35% reduction in common colds for occupants of individual offices, as compared to occupants of shared offices [3]. Quible points out that excessive noise can affect employees psychologically due to an increase of blood pressure and metabolic rate, which in turn can decrease their productivity.[5]

Temperature

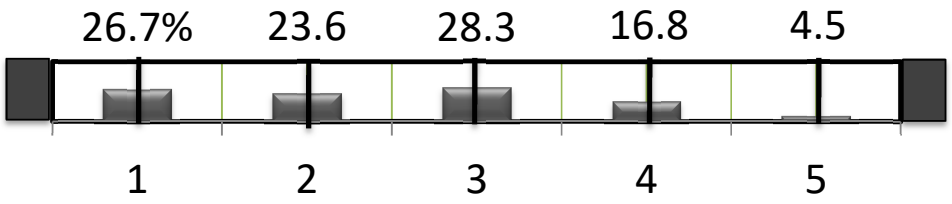
1. Room temperature affects your normal level of productivity

3.5% No effect, 24.7% Positive effect, 30.5% Normal effect, 35.5% Quite good effect, 5.9% Bad effect



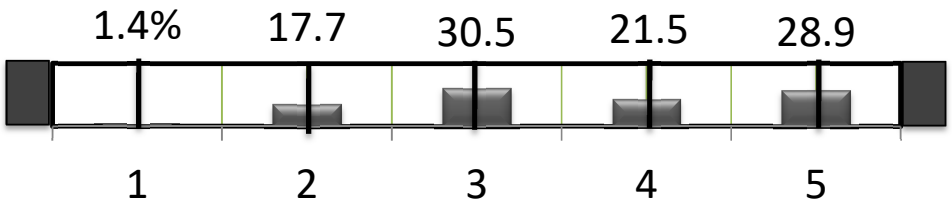
2. Temperature of my workspace in winters

26.7% Cold, 23.6% Cool, 28.3% Pleasant, 16.8% Slightly warm, 4.5% Warm



3. Temperature of my workspace in summers

1.4% Cold, 17.7%Cool, 30.5% Pleasant, 21.5% Slightly warm, 28.9% Warm



4. Control temperature or airflow in my office

9.2% strongly disagree, 36.8% disagree, 17.6% neutral, 33.2% agree, 3.2% strongly agree

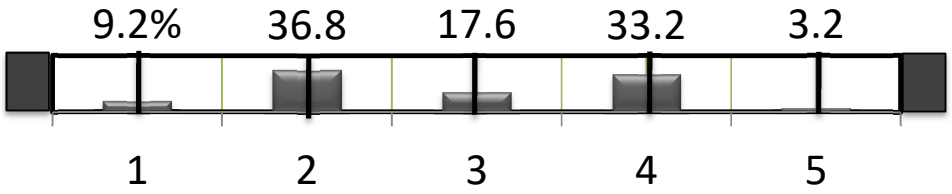


Table 2: Satisfaction with Temperature of Office

Question	Response(%)
Room temperature affects your normal level of productivity	60.2
Temperature of my workspace in winters	49.6
Temperature of my workspace in summers	49.6
Control temperature or airflow in my office	36.4

Previous research also emphasize the need of optimum temperature in offices. Japanese law mandates that office building thermostats be set at 28°C(83.4°F) in the summer time; a professor at Japan's Waseda University demonstrated that productivity dropped by 2.1% when the average indoor air temperature increased by1°C (1.8°F), and that individual air velocity control reduced the perception of workers' mental fatigue (as quoted by Salah Nezar)[6] .

4. Conclusion

It can be concluded that approximately fifty percent of the employees working in private and public sector offices in Chandigarh are satisfied with their office noise levels (disturbance and distractions) and temperature range (according to weather and airflow). People who are actively involved in the work force spend a large proportion of their lives in their place of work. It is important that the physical aspect of the workplace and satisfaction should be given its due importance.

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