



# ASSESSMENT OF WORKPLACE ENVIRONMENT OF BPO EMPLOYEES

<sup>1</sup>Falguni K. P., and <sup>2</sup>Roopa R.

Department of Community Resource Management, College of Home Science Nirmala Niketan,  
(Affiliated to the University of Mumbai), Mumbai – 400 020, Maharashtra State, India

**Abstract:** The Business Process Outsourcing (BPO) industry has witnessed significant growth, driven by cost reduction, enhanced efficiency, and improved service quality. However, the health and well-being of employees often receive inadequate attention, leading to poor workstations and working environments. This study aims to assess the workplace environment of BPO employees, focusing on factors such as noise levels, illumination, indoor air quality, and ventilation. A thorough evaluation was conducted to understand the existing conditions and identify areas of improvement. The assessment revealed a lack of acoustic treatment in the majority of BPO companies, resulting in significant sound-related issues for employees. Indoor air quality and ventilation systems also demand attention. Ensuring proper air circulation, ventilation, and efficient removal of pollutants is essential to safeguard the respiratory health of employees. Regular maintenance and cleaning of ventilation systems, as well as the implementation of air filtration mechanisms, are strongly advised. This study highlights the significance of creating a supportive and healthy workplace environment for BPO employees. By addressing the identified shortcomings and implementing the suggested measures, BPO companies can enhance employee well-being, job satisfaction, and overall productivity. Additionally, fostering a culture of employee health and safety will contribute to the long-term success and sustainability of the BPO industry. It is recommended that BPO companies proactively invest in improving their workplace environments, integrating ergonomic principles, and adhering to occupational health and safety standards. The findings of this study can serve as a valuable guide for decision-makers, human resource professionals, and facility managers in the BPO sector to develop effective strategies and policies that prioritize employee health and create a conducive work environment.

**Keywords:** BPO employees, Ergonomics, Occupational Health, Work Environment

## I. INTRODUCTION

India has the highest number of Business Process Outsourcing (BPO) services with a high work delivery rate, catering mainly to Western operations of multinational corporations. The Indian BPO industry has been a global leader in offshore outsourcing since the early 1990s. India has emerged as one of the world's leading outsourcing destinations. It was driven primarily by the Indian IT services sector. Multiple factors that have contributed to India's success in the BPO space are: India's highly skilled and educated workforce; Lower cost of services provided than any other country; delivery of a wide range of services that are in high demand; favourable and liberalized policy framework also helps boost the Indian IT outsourcing market. The industry is expected to grow at an 8% CAGR and reach US\$225-250 billion by 2025 ([India's ITES-BPO industry is expected to grow at 8 percent CAGR, reaching US\\$225-250 bn by 2025 \(theprint.in\)](https://theprint.in/india/ites-bpo-industry-is-expected-to-grow-at-8-percent-cagr-reaching-us225-250-bn-by-2025/)). This growth is being propelled by the increasing demand for digital services, which is being driven by the growth of new technology-focused businesses and the explosion in data volumes.

However, the employees in the BPO sector in Mumbai face several challenges that can impact their well-being and work experience. These challenges include Workload and Work Pressure due to the strict deadlines in handling large volumes of work; Shift Work and Irregular Schedules that typically involve round-the-clock service leading to rotating shifts and irregular work schedules; Monotonous and Repetitive Tasks which often involve performing repetitive tasks, such as data entry or customer support, for extended periods; Health Risks and Sedentary Lifestyle; Technological Challenges; Communication and Language Barriers which presents itself while interacting with clients and customers from different regions and cultures; Stressful Customer Interactions; Career Growth and Job Insecurity due to high attrition rates and limited career growth opportunities; Transport and Commuting Issues due to Mumbai's traffic congestion and long commuting times.

Addressing these challenges requires a multi-faceted approach, including implementing employee support programs, promoting work-life balance, providing training and career development opportunities, ensuring a healthy work environment, and fostering a positive organizational culture. By addressing these challenges, BPO companies can enhance employee well-being, engagement, and overall job satisfaction. Implementing measures such as workload management, ergonomic interventions, improved shift scheduling, supportive work environments, and stress reduction initiatives can help mitigate the negative impact of these factors on employee health.

## II. JUSTIFICATION FOR THE STUDY

BPO employees spend a substantial portion of their lives in the workplace, and their well-being is crucial for their overall quality of life. Understanding the factors that impact their occupational health can help identify areas where improvements can be made to enhance their well-being. Employee health and well-being directly influence productivity and performance levels. A conducive work environment promotes employee engagement, reduces absenteeism, and enhances job satisfaction, leading to increased productivity and improved overall performance of the organization. The reputation of the BPO sector as a whole can be influenced by the well-being and occupational health of its employees. Organizations that demonstrate a commitment to creating a healthy work environment can contribute to improving the industry's image and attracting more clients and business opportunities.

Addressing the physical work environment factors requires proactive measures from employers. Conducting regular assessments and audits of the workplace, seeking employee feedback, and implementing appropriate modifications and improvements can help create a safer and more supportive work environment for BPO employees, thereby promoting their overall occupational health and well-being.

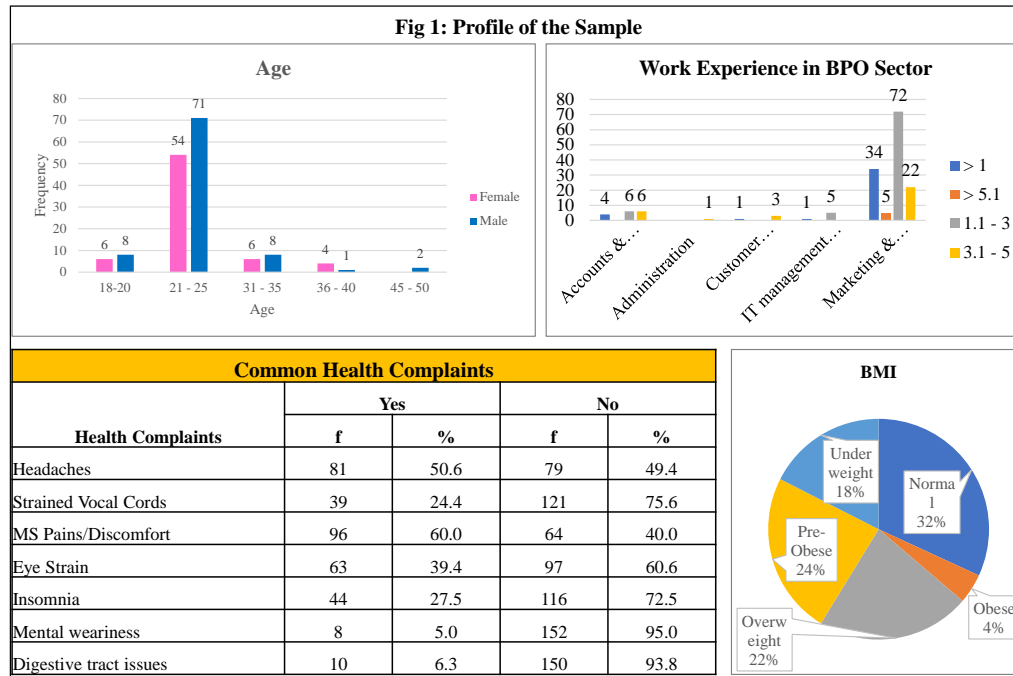
## III. SPECIFIC OBJECTIVES

The study aims to identify the factors that affect the occupational health of the employees from the BPO sector, with the specific objectives being: to (i) learn about the demographic profile of employees in the BPO industry; (ii) evaluate the working environment, and its effects on BPO employees; and (iii) provide ergonomic suggestions to improve the working environment of BPO sector.

## IV. METHODOLOGY

An exploratory study was conducted among 160 (90 male and 70 female) employees from 4 major BPO centres located in Mumbai city & its suburbs. An exploratory research design is mainly used when conducting research where there is no pre-existing knowledge. A non-probability sampling technique was used to select the participants (aged 19 -45 years ).

A Self-constructed and validated questionnaire was used to elicit demographic data such as age educational qualification, years of experience, and general health status. The work environment was assessed using the Ergonomic Work Environment Assessment (EWA) checklist. The questionnaire was divided into 3 sections; Part A included questions about the demographic profile of the BPO employees; Part B consisted of work-related information and Part C included the ERA checklist. A structured interview on-site helped collect the required information. The data was coded and systematically analyzed using the pivot table tools in an MS Excel sheet (version 2009) and simple statistics such as average, median, and percentages. The analyzed results were presented using pivot tables, graphs, and charts.



## V. RESULTS AND DISCUSSION:

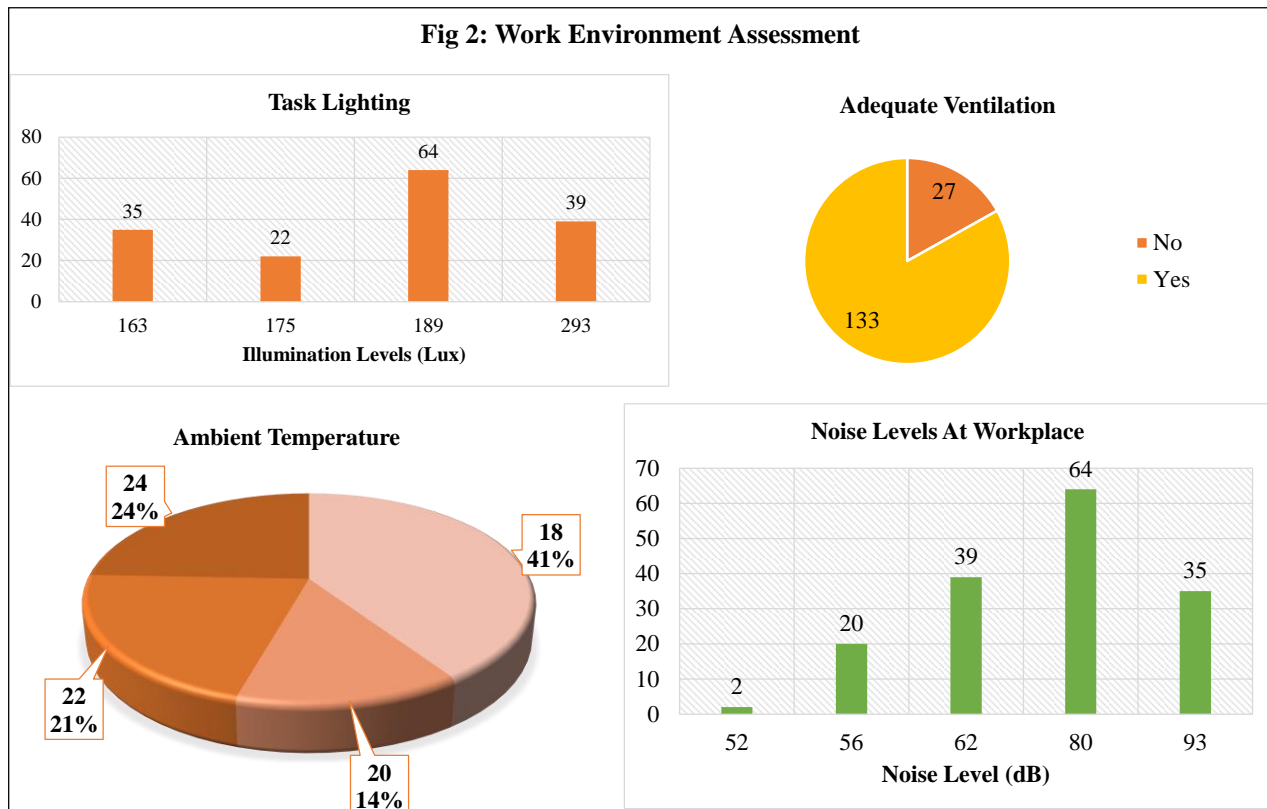
- Profile of the Sample:** Demographic profile includes personal and common information about individuals like age, sex, Marital status, and educational qualification. This information helps the researcher to study the individual's background.

As observed in Fig. 1 the average age of the sample is 25 years, with a majority of [125 (78.1%)] participants belonging to the young age group 21 – 25 years. [90 (56%)] are male participants and [70 (44%)] are female participants. A larger section of the sample [126 (78.8 %)] are not married and [34(21%)] married. The educational qualification of BPO employees is majorly graduation [86(54%)], with a small percentage being [5(9%)] being post-graduates. [138 (86.3%)] earned approximately Rs. 15,000 – 30,000 per month, whereas [12 (7.5%)] earned upto Rs. 45,000/-

**Work Environment Assessment:** The Ergonomic Work-Environment Assessment (EWA) was done by using the open-to-use checklist. The checklist included questions regarding the illumination, noise, ventilation, and ambient temperature of the workplace. The responses were either Yes or No. The illumination and noise levels were measured by a lux meter and sound meter.

The average task lighting is 206.7 lux whereas the recommended illumination level for any desk work is up to 300 lux. Despite having highly illuminated general lighting, the task lighting was below the recommended levels. The majority of employees [64 (40 %)] had a task lighting of 189 lux whereas [39 (24.3%)] had 293 lux. 293 lux is an almost adequate illumination level, but quite contrary to this only [2 (1.3%)] reported that the illumination levels at the workplace are inadequate.

The average noise level was recorded as 75 dB which is well within the recommended levels for any workplace. The lowest recorded was 52 dB and the highest was 93 dB. 93 dB is above the recommended levels and was recorded at [35 (21.9%)] participants' workplaces.



Many employees [133 (83%)] reported adequate ventilation in their workplace and [27 (17%)] reported inadequate ventilation. [129 (81%)] claimed that they have clean & unobstructed ventilation ducts installed in the workplace whereas [31 (20%)] said they do not have clean & unobstructed ventilation ducts. At [65 (41%)] workplaces 18 degrees Celsius was recorded as the ambient temperature followed by 24 degrees Celsius at [39 (24.3%)] workplaces and 22 degrees Celsius in [34 (21.2%)] workplaces. [22 (14%)] Workplaces recorded the ambient temperature as 20 degrees Celsius. 22°C – 24°C is recommended as the ideal workplace temperature. This is evident when the participants were asked if the work environment was comfortable - the majority [98 (61.2%)] reported that they did not do not have a comfortable indoor temperature at their workplace whereas [62 (39%)] that their workplace temperature was comfortable.

To summarize the findings, the study involved 160 participants from the BPO sector, with an average age of 25 years. Many employees (82%) belonged to the age group of 21-25 years, with a higher representation of males (56%) compared to females (44%) among the participants. Education-wise, most participants were graduates (54%), followed by 12th pass (35%), post-graduates (9%), and a small percentage with diplomas and 10th pass qualifications (1%).

Regarding the physical work environment, all the surveyed companies had visible illumination in their work areas. However, the recommended lux level of 200 for tasks like reading and writing was not met. Many employees (64) had an illumination level of 189 lux, followed by 39 employees with 293 lux, 35 employees with 163 lux, and 22 employees with 175 lux.

In terms of ventilation, most companies had clean and unobstructed ventilation ducts in place, providing fresh and clean air for 133 out of 160 participants. However, 31 employees reported inadequate ventilation, which could be attributed to obstructed ducts or proximity to smoking zones.

The study also revealed that a significant number of employees (98) did not have a comfortable indoor temperature due to low Air Conditioner settings of 18 degrees Celsius in most companies. In terms of sound levels, many companies had a noise level of 80 dB, which exceeds the recommended limit for employee safety. Prolonged exposure to noise levels above 70 dB can potentially cause hearing damage.

These findings highlight the need for improvements in the work environment of BPO employees, such as ensuring appropriate illumination levels, addressing ventilation issues, regulating indoor temperatures, and implementing measures to reduce excessive noise. By addressing these factors, employers can create a healthier and more conducive workplace environment, promoting the well-being and safety of their employees.

## VI. SUGGESTIONS BASED ON THE RESULTS OF THE STUDY

Workplace safety & knowledge of ergonomics has three levels that can help the workers to have a healthy work profile. Based on the findings of the study, the following control methods can be suggested according to the control hierarchy to address the workplace environment factors and promote the occupational health of BPO employees in Mumbai:

### Elimination/Substitution:

- Implementing noise control measures, such as using soundproofing materials, to reduce noise levels in the work area.
- Exploring the use of alternative technologies or equipment that produce lower noise levels.

### Engineering Controls: Engineering control reduce or prevent hazards from encountering workers.

- Installing acoustic treatment walls or barriers to minimize sound transmission.
- Improving the illumination levels by increasing the number of light sources or using brighter bulbs to meet the recommended lux levels for reading and writing tasks.
- Enhancing ventilation systems by ensuring clean and unobstructed ventilation ducts throughout the workplace.
- Optimizing the indoor temperature settings to provide a comfortable working environment, considering the preferences and thermal comfort needs of employees.

### Administrative Controls:

- Adequate rest breaks involve reducing the time during the working day that an employee is exposed to the hazards, by giving the employee either other work or rest periods. Overall One hour break should be provided to the employees which includes mid-morning, lunch, and tea breaks.
- Training & Development, training helps people acquire the skills, knowledge, and attitude to make them competent in the health and safety aspect of their work.
- Conducting regular training and information dissemination workshops/seminars on the importance of good occupational health and well-being.
- Educating employees on the proper use and maintenance of PPE and promoting their consistent use in noisy environments
- Implementing policies and procedures to regulate noise levels and minimize exposure time to high-noise environments.
- Establishing designated smoking areas away from the main work areas to reduce the impact of secondhand smoke on ventilation quality.
- Regularly monitoring and maintaining ventilation systems to ensure proper functioning and air quality.

### Personal Controls:

- Providing employees with suitable hearing protection devices, such as earplugs or earmuffs, to mitigate the effects of high noise levels.
- Proper use and maintenance of PPE and promote their consistent use in noisy environments.
- Exercising, yoga, and fun activities like games to lower the workload, light up the pressure and maintain a loving and friendly working environment.

## VII. SCOPE OF THE STUDY

The study results can contribute to the formulation of policies and guidelines focused on occupational health and safety in the BPO sector. These policies may include provisions for ergonomic standards, shift scheduling practices, break durations, and overall well-being initiatives. By integrating the study findings into policy development, organizations can create a supportive framework that prioritizes employee health and reduces occupational health risks.

Effective Training and Education programs can be designed. Employees can receive training on ergonomics, workstation setup, proper lifting techniques, and stress management techniques. Education can also focus on raising awareness about the importance of maintaining a healthy work-life balance, managing work-related stress, and recognizing early signs of health issues. By providing employees with knowledge and skills, they can actively participate in maintaining their health and well-being.

Based on the study findings, employers can implement physical modifications in the workplace to address identified health issues. The study results can also foster a culture of employee engagement and support. By sharing the findings with employees, organizations can demonstrate their commitment to their well-being. Employee feedback can be sought to gain insights into their experiences and preferences, allowing organizations to tailor interventions and initiatives to meet their specific needs.

Overall, the implementation of study results requires a collaborative effort between management, human resources, and employees. It is essential to communicate findings effectively, involve employees in decision-making processes, and continually monitor and evaluate the effectiveness of interventions. By utilizing the study results to inform strategies, policies, and workplace modifications, organizations can create a healthier and more supportive work environment that enhances the overall occupational health and well-being of BPO employees in Mumbai.

### VIII. AUTHOR'S STATEMENTS

- *Acknowledgment:* The authors express their sincere gratitude to the BPO offices and their employees for their invaluable contributions to this research study.
- *Informed Consent:* Before their participation, all 160 participants provided written informed consent, demonstrating their understanding of the study's objectives, procedures, and potential risks.
- *Conflict of Interest:* The authors disclose that they have no conflicting interests that could potentially influence the objectivity or integrity of the research conducted.

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